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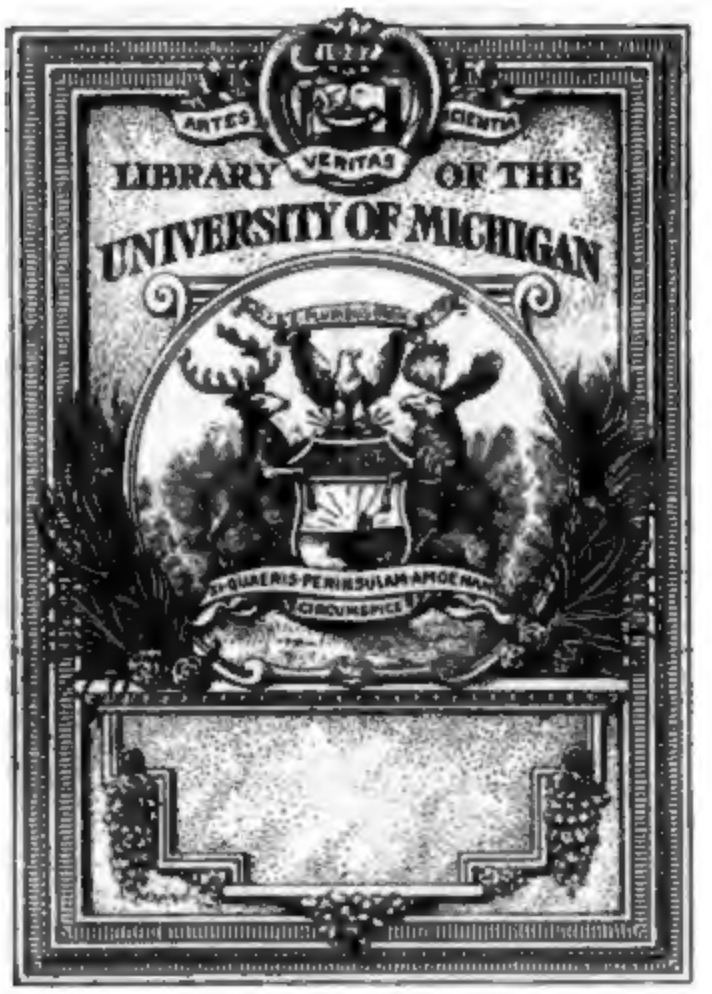

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REPORT

OF THE

INVESTIGATION OF THE UNITED STATES PATENT OFFICE

MADE BY

THE PRESIDENT'S COMMISSION ON ECONOMY AND EFFICIENCY

DECEMBER, 1912

DECEMBER 9, 1912.—Referred to the Committee on Patents and ordered to be printed, with illustrations

WASHINGTON
1912

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MESSAGE OF THE PRESIDENT.

To the Senate and House of Representatives:

I transmit herewith a report relating to an investigation of the United States Patent Office made by the Commission on Economy and Efficiency pursuant to the joint resolution approved August 21, 1912.

WM. H. TAFT.

THE WHITE HOUSE, *December 9, 1912.*

INVESTIGATION OF THE UNITED STATES PATENT OFFICE.

DECEMBER 7, 1912.

The PRESIDENT:

The Commission on Economy and Efficiency has the honor to submit the following report of its investigation of the United States Patent Office made pursuant to the joint resolution "Requesting the President to cause an investigation of the Patent Office and make a report with recommendations to Congress," approved August 21, 1912. The resolution is as follows:

> That the President of the United States be, and he is hereby, requested to cause the accountants and experts from official and private life now or hereafter employed in the inquiry into methods of transacting the public business of the Government in the several executive departments and other executive Government establishments, known as the Commission on Economy and Efficiency, to investigate fully and carefully the administration of the Patent Office with a view of determining whether or not the present methods, personnel, equipment, and building of said office are adequate for the performance of its functions, taking into consideration the present character and volume of business, and also such increase in complexity or volume as may reasonably be expected in the future, and to ascertain and recommend specifically to Congress not later than December 10, 1912, what changes in law, what increases in appropriations, and what additional building accommodations, may be necessary to enable the Patent Office to discharge its functions in a thoroughly efficient and economical manner, and to what extent any expenditures which may be recommended can be met by increases of Patent Office fees.
>
> All expense incurred in carrying out the purposes of this resolution shall be paid out of any funds in the Treasury of the United States not otherwise appropriated, and the sum necessary for said purposes is hereby appropriated: *Provided*, That the total expense authorized by this resolution shall not exceed the sum of $10,000.

The commission has made as complete an investigation of the subjects specified in the resolution as the time allowed has permitted. Due to the fact that some preliminary inquiry had to be made to determine the best method of proceeding with the investigation and to decide the extent to which the inquiry on each subject should extend and to the fact that several weeks were required for formulating the report, the actual work of investigating conditions was limited to about two months. This short time does not warrant the commission in exhaustive recommendations concerning many details of handling the technical and clerical work of the office.

The report refers to many subjects upon which definite recommendations are not made. It seemed best to include a statement of fact relating to many features of the work of the office and its administration so that there might be presented a more complete view of the problems involved in the administration of this important branch of the public service. It was believed also that such a collection of facts would be of value in future investigations looking to an improvement of the Patent Office, or in a continuance of the present one if Congress should so direct, or if the funds appropriated for the general work of the Commission on Economy and Efficiency would warrant the use of a sufficient number of the commission's employees during the coming year in a further consideration of the problems involved and a working out of the details of some changes herein recommended.

The joint resolution referred to was approved August 21, 1912; three days later, on August 24, the act making appropriations for the sundry civil expenses of the Government for the fiscal year ending June 30, 1913, was approved. In the latter act was an appropriation for the general work of this commission amounting to $75,000, with the following limitation:

> *Provided*, That not exceeding three persons may be employed hereunder at rates of compensation exceeding $4,000 per annum.

The commission as now organized by the President consists of three members, each of whom receives a compensation in excess of the rate referred to. While the joint resolution authorizing the investigation of the Patent Office provides that "All expense incurred in carrying out the purposes of this resolution shall be paid out of any funds in the Treasury of the United States not otherwise appropriated," the total expense not to exceed $10,000, it was decided by the Comptroller of the Treasury that experts to aid the commission in the Patent Office investigation could not be employed at rates of compensation exceeding $4,000 per annum, or $11.11 per day, because of the limitation in the act of August 24, 1912, hereinbefore quoted. The commission has been limited, therefore, in the selection of persons to assist it in the work and has been unable to employ, even for short periods, the services of persons in the active practice of law in patent causes or others thoroughly familiar with the patent law and practice.

The commission has conducted the investigation through one of its members and its regular employees and has secured the views of a large number of attorneys and others practicing before the Patent Office and of inventors concerning certain questions submitted to them.

SCOPE OF THE INVESTIGATION.

Having stated the authority for the investigation, it is proper to refer briefly to the extent to which the commission felt justified in going under the terms of the resolution. It has been the purpose to confine recommendations to the specific subjects referred to in the resolution, although the investigation necessarily included some subjects relating to the general patent law. This was found essential to a full appreciation of the methods employed in the Patent Office, as well as the questions of personnel, equipment, building accommodations, and fees.

While the resolution required the commission to investigate fully and carefully the administration of the Patent Office with a view of determining whether or not the present methods, personnel, equipment, and building are adequate for the performance of its functions, etc., it requires, as a result of the investigation, that recommendations shall be made to Congress concerning (1) what changes in the law, (2) what increases in appropriations, and (3) what additional building accommodations may be necessary, also to what extent any expenditures recommended can be met by increases of Patent Office fees.

Having in mind the evident purpose of the resolution, the recommendations submitted by the commission are particularly those called for or such as are collateral or so closely related as to be inseparable. Other recommendations are made, some of which would require a change of law, and many of which are matters of administration which can be regulated by executive action. No attempt has been made to investigate or report upon those questions of general patent law which are clearly not within the purpose of the resolution. Such questions relate to the extent of the monopoly that should be given to a patentee, the working of patents, or compulsory license, the jurisdiction of the courts in patent litigation, etc.

Some questions of patent law are considered and recommendations made concerning them because the questions were intimately connected with the administration of the Patent Office, as, for example, the intentional delay in prosecuting an application for a patent, with the recommendation that a patent be granted for 19 years from the date of filing the application instead of for 17 years from date of issue as at present.

INVESTIGATION OF PERSONNEL.

In the investigation as to the efficiency of the personnel it was not possible, because of lack of time, for the inquiry to extend to the efficiency of each of the more than 900 employees in the Patent Office. In this report certain defects in the handling of the personnel are pointed out; there are no efficiency records for the examining force

and for many years there have been no examinations for the purpose of determining the efficiency of examiners and regulating their promotions or reductions. A further investigation should be made into this subject of efficiency with the purpose of devising plans for making available at all times accurate information as to the quantity and quality of work performed by each employee. This is a difficult problem so far as the examiners are concerned, but such a record as is practicable, when combined with an efficient system of examination, will tend to encourage employees to do the best work, and will make adequate salaries a real and lasting benefit to the service.

MINOR RECOMMENDATIONS.

Throughout this report there are many minor recommendations and suggestions concerning the methods of work in the office. These recommendations relate to the internal management of the office, and to the administration of the office in a way that will produce better results with the same or less expenditure of time and money.

BUILDING ACCOMMODATIONS.

In the preliminary survey preceding the investigation the commission was impressed with the idea that the building accommodations for the Patent Office are so inadequate as to render extremely difficult any substantial improvement in the work of the office. This impression has been changed as a result of the investigation until it has become a settled conviction that any permanent improvement in the quantity and quality of work done by the office, if done at a reasonable cost, must wait upon provision being made for adequate office accommodations for the force of more than 900 people employed in the Patent Office.

There is no doubt that some improvements can be made at the present time in the methods, personnel, and equipment, but these improvements would not result in such a measure of economy and increased efficiency as would follow if the building and equipment for the office were of a character commensurate with the importance of the work. In an office with duties like those of the Patent Office, and where the salary roll exceeds $1,300,000 per annum, it is no exaggeration to say that a considerable percentage of expenditure (probably as much as 25 per cent) is lost, due to the unreasonable crowding of employees into quarters unsuited to the work and the requirement that the work must be done under conditions that are, to say the least, undesirable and extravagant.

The commission decided, in view of the terms of the resolution, that it was essential that its recommendations should be made with a view to an increase in the efficiency of the office, assuming that

adequate provision will be made for quarters in which the work is done. It is not assumed that there is any arrangement by which the present force, or such increase as the necessities of the immediate future require, could be accommodated in the present quarters without a considerable and constant decrease in efficiency.

PROPOSED CHANGES IN LAW.

Complying with the terms of the joint resolution the commission submits the following recommendations which require changes in law:

1. That a new building specially designed, equipped, and furnished be constructed on a suitable site in the city of Washington, for the exclusive use of the United States Patent Office.

2. That the number of officers and employees of the United States Patent Office be increased, and the increases and readjustments of salaries be made, as shown in detail in this report, involving an increase of 36 in the number of employees and a total increase of $236,550 in the pay roll.

3. That the Commissioner of Patents be the head of the Patent Office; that his duties be the same as are now prescribed by law, excepting that he be relieved from the consideration of cases on appeal; that he be aided by an assistant commissioner and seven supervising examiners in the administrative work, including control of the methods and procedure of the 43 examining divisions in the allowance and rejection of applications for patents.

4. That one appeal within the United States Patent Office be eliminated; that the number of members of the board of examiners in chief of the Patent Office be increased from three to five; that all appeals within the office be taken to that board; that its decision be the decision of the Patent Office; that the appeal therefrom be to the Court of Appeals of the District of Columbia as now allowed from the decisions of the Commissioner of Patents.

5. That the fee for filing an application for a patent be increased from $15 to $20; that appeal fees be readjusted to the condition arising from the elimination of one appeal; that a fee of 25 cents be charged for each additional patent, etc., included in one instrument presented for record; that all fees be paid directly to the Patent Office; that refundment of fees paid by mistake be made by the financial clerk and not by warrant from the Treasury.

6. That the life of a patent be so limited as to expire 19 years from the date of filing the application therefor, excluding the time (not exceeding two years) during which an application may be involved in interference.

7. That the work of reclassifying patents and digesting of printed publications, and providing facilities for simplifying and making more

accurate the search, be recognized by an appropriation for an adequate force to be employed upon such work.

8. That the subscription price of the Official Gazette be increased from $5 to $10 and the method of distribution to libraries be changed to reduce the number of copies so distributed.

9. That all the work of producing the publications of the Patent Office, including copies of patents, be done at the Government Printing Office.

10. That an appropriation be made for the repair of the rooms occupied by the Patent Office and for the installation of suitable lighting and ventilating facilities and for the purchase of new furniture and equipment.

CHAPTER 1.

INTRODUCTION.

REVISION OF LAW AND CHANGE OF OFFICE METHODS ONE PROBLEM.

Soon after the commission had undertaken this investigation it became apparent that an investigation of the Patent Office for the purpose of reporting to Congress upon those subjects only concerning which the resolution directed that a report be made would be a difficult task. As the investigation progressed and the complexity of the problem was clearly seen, the commission became convinced that any investigation which is limited as this is to the methods, personnel, equipment, and building accommodations of the Patent Office, or any separate investigation that might be undertaken, limited to the general patent law, would not produce the best results.

The methods of the Patent Office in doing the technical work for which it exists are the result of experience; they bear upon their face the impress of the labor and industry of many Commissioners of Patents and other officials connected with the office. In these methods can be seen the rulings and precedents of former years, hardened into customs that so frequently have, and ought to have in the Government service, the force of law.

The procedure in the Patent Office resembles the procedure of the courts in that the interests of the public and of practicing attorneys are intimately concerned with it. No change, however much it may be needed to keep pace with changed conditions, can be made without vigorous opposition due to a large extent to that inherent prejudice against disturbing the daily routine of life and the inconvenience of adapting one's mind to a new course of action.

That there are serious difficulties encountered in any attempt to reform and simplify the procedure of the courts is well known. It is not surprising that a Commissioner of Patents should hesitate to take radical action in substituting for an old practice one that he believes to be better, when he knows the proposed change will be vigorously opposed by many whose interests must be considered. Recommendations made by the present Commissioner of Patents for the amendment of laws to effect what he considers are improvements in the methods of the office and to expedite its work, are opposed by those who do not agree with him as to the wisdom of the changes as well as by those whose financial interests would be affected unfavorably.

Without referring specifically to any recommendation made by the commissioner, and without regard to whether or not any particular recommendation is one that ought to be favorably acted upon by Congress, the commission is convinced that any proposed change in the patent law and almost any proposed change in the methods of procedure in the Patent Office will arouse opposition from some persons interested in securing patents. This conclusion as to the diversity of views among attorneys and inventors is based upon a careful consideration by the commission of the opinions expressed by hundreds of attorneys practicing before the Patent Office, and by many inventors, in response to inquiries sent to them by the commission.

It is the opinion of the commission, not only that a revision of the patent law and improvement in the methods of the Patent Office should be considered together, but that when this is done it will be found advantageous to include in the revision of the statutes a number of details governing the methods of handling business in the Patent Office, particularly with reference to the simplifying and expediting the course of business in dealing with attorneys and inventors in connection with applications for patents and other business before the office.

No matter how much work may be imposed upon the Patent Office in following the practices of many years, it is not to be expected that the Commissioner of Patents can make a radical change in such practices and establish, and effectively enforce, rules which are objectionable for various reasons to a large number of persons having business with the office. Patent Office business has grown to such an extent that there should be some remedies provided by law for existing conditions which delay the work, other than the large increase in the application fee suggested by some persons or the various other means of reducing the number of applications, so that an adequate control can be exercised over such questions as the multiplicity of claims in an application, the methods of search in cases of applications for combination patents, etc. Briefly stated, simplification of methods by positive requirements of law, both as to the general patent law and the administrative procedure, is what is needed.

THE PATENT SYSTEM.

As a part of the investigation undertaken by the commission it was necessary to study to some extent the development of the patent system of the United States, and to consider, so far as the limit of time permitted, the patent systems of those foreign countries in which particular attention has been paid to the subject of patents.

In view of the fact that the present law and procedure relating to the granting of patents in the United States is substantially the same

as the act of 1836, it is evident that the so-called examination system then begun, and developed from time to time since that date, has been the basis for the patent systems of the leading foreign nations. In Appendix A to this report there is given a history of the United States patent system, showing the gradual development of the law and procedure and the growth of the patent business. Appendix I shows in statistical form the rapid increase in the work of the office.

PATENT SYSTEMS IN FOREIGN COUNTRIES.

In many foreign countries the business of granting patents has not been fully developed. In a large number the registration plan is substantially all that has been attempted. While that plan may be satisfactory in countries where manufacturing has not been fully developed, it has been found necessary in Germany and Great Britain to proceed upon the basis of granting patents after examination, as has been the rule in the United States since 1836. The English patent law provides for a more limited examination than is the case in Germany. In the latter country some differences exist in the patent law from the law of the United States, particularly with reference to opposition to the grant, the annulment of a patent, the requirement of annual taxes on a patent, the rules concerning the working of patents, and compulsory licenses.

The commission has been favored with a paper on the German law and procedure by Prof. Dr. Albert Osterrieth, of Berlin, a leading authority on the subject. From the law of Germany and his paper, which are printed in Appendixes C and E, respectively, to this report, the details of procedure under the German patent system can be readily obtained. The commission has also obtained a paper from Mr. A. du Bois-Reymond, of Berlin, which paper not only compares the advantages of the laws of Germany, England, and the United States, but also discusses the differences in procedure in those countries. (See Appendix F to this report.) His discussion of the advantages and defects of the several systems is an interesting contribution to an understanding of the experience of leading foreign nations, and will be useful in the consideration of changes that are suggested in the law and procedure applicable to the patent system of the United States. It is proper to add that both Dr. Osterrieth and Mr. du Bois-Reymond were compelled to prepare their papers in a very short time in order that they might be available for use in connection with this report.

In Appendix D to this report there is presented the British law relating to the granting of patents, together with information on the subject of the organization and personnel of the British patent office, and a statement with reference to the building accommodations provided for the patent office.

NEEDS OF THE UNITED STATES PATENT OFFICE.

In this report the commission has presented information concerning the defects which exist in the operation of the patent system of the United States, particularly with reference to the work of the Patent Office, and submits its recommendations thereon. While there are some persons interested in the subject who believe that the United States should return to the system of registering patents and allow all questions involving validity and priority of invention to be determined in the courts, these persons are decidedly in the minority. It appears to be the general opinion that the system of law and procedure that has been developed during the past 76 years is right in principle and should be continued. What is needed, and is urged on all hands, is an improvement of the law and procedure looking toward a perfection of the existing system. If changes can be made that will make it possible to come closer to the ideal—to grant only such patents as are authorized to be granted and to reject all applications that should not be allowed—it is believed that the examination system will have produced the results which were contemplated at the time of its establishment and which are so much to be desired.

During the past 40 years the number of applications for patents has grown rapidly. With that growth the difficulties in conducting a proper examination of an application have increased as the field for search has grown and the complexity of the subjects of invention has increased. It is a self-evident fact that as the number of existing patents in the United States and in foreign countries increases, the work of examining each new application becomes more difficult and consumes more time. These two factors, increase in the number of applications and increase in the complexity of the work, make it clear that an increase in the examining force proportioned to the increase in applications filed is not sufficient under the same methods of work to give to the increased number of applications as accurate an examination as was formerly the case.

The commission believes that a constant increase in the force of examiners will not solve the problem that is presented. The addition of 20 or more examiners each year would enable the office to give to each application the same amount of time that has been given to one application heretofore. It is our opinion that to constantly increase the examining force without other change would not result in benefit to the service, nor would it give greater validity to the patents that are issued. A continual increase in the examining force will but accentuate the differences of opinion that must exist among a large force of men doing the same class of work. The time has come when the office must make a radical change in its methods of examining.

For many years it has been contended that the Commissioner of Patents was unable from lack of time to properly supervise the work of such a large number of examining divisions. In 1898 Congress granted the request of the Patent Office for a force of examiners to make a new classification of patents and digest of publications. This was a step in the right direction. But for reasons stated in this report the work of classification has not proceeded as rapidly as is desired. In the chapter on the Classification Division (chapter 5) the commission has recommended a substantial increase in the force assigned to the classification work in order that the benefits of a new classification and digest of publications may be available to the entire examining force and to the public within a reasonable time, which has been set at five years.

In addition to this work of classification there should be a current digest of the decisions of the office and of the courts in a card index or other form to be available to all the examiners, so that the time consumed by each member of the examining force in making the digests or notes as to decisions can be eliminated. A further recommendation that is made relates to the providing of a force of seven supervising examiners or inspectors whose duty it will be to assist the commissioner in formulating rules governing the examining force and in bringing to his attention for appropriate action the allowance of applications which may be contrary to the procedure established by the commissioner. This subject is discussed in detail in chapter 2 on administration of the office.

IMPROVEMENT OF METHODS.

The commission has not had the opportunity to investigate as fully as the importance of the subject requires the question of what new methods can be introduced in the office to simplify and make more accurate the search while at the same time occupying less time than is now devoted to the subject. It is evident that if a force of more than 350 examiners have provided for them every possible facility in the way of classification, digests, and other facilities for search, the time consumed by each of them can be materially reduced. If, in addition, a practical method of preserving and making available the results of the searches made can be devised it is also clear that much time can be saved.

While the subject of examining an application and making a search involves work of a high character it does not seem to the commission that it is inconsistent with the idea that some of the results of such work (other than action upon the one case) should be preserved in a form that will be useful in the next search and to a new examiner assigned to the particular subject. The examining force has been so busily engaged with the task of keeping up the current work that it

has been almost impossible for full consideration to be given to that radical improvement of the methods of the office which is necessary to the most economical and efficient work in the examination and allowance of patents. The result has been that there has not been available in the office a force of examiners who could be assigned to the working out of improved methods of performing the examination work

BUILDING ACCOMMODATIONS.

The commission believes that the providing of adequate facilities in the way of office room is essential to any substantial improvement of the work of the Patent Office. A constant increase of force would make it possible to make some disposition of applications within a reasonable time, but without adequate building accommodations and proper equipment and facilities the production of the results that are suggested by the number of invalid patents granted will not cease. The loss due to crowded conditions, made worse by each increase of force, and the absence of proper equipment and facilities has certainly resulted in securing from the examining force employed a quantity and quality of work that is much below what would be secured if conditions under which the work is done were improved. The salary roll of the office exceeds $1,300,000 per annum. To provide this large force with suitable accommodations and proper facilities would undoubtedly largely increase its efficiency.

In the work of the clerical force and in the storing and distribution of publications it is very clear that in properly arranged quarters with suitable mechanical equipment the work could be much better done with a decrease in the number of employees. This would make possible the orderly arrangement of the files and publications in a way to remove the grounds for complaint that the clerical work is not properly done. In the case of the entire force of the office, numbering 939 people, it is quite evident that the best results can not be obtained under existing conditions. In the opinion of the commission it is a conservative statement to make that if the examining force were given sufficient room so that the assistant examiner would do his work under the eye of his chief, but still be separated from the noise and confusion incident to the attempt to work in an open room with a number of other examiners, all of whom are subject to the interruptions of every person visiting the room, an increase in efficiency of 30 per cent would result. To have a principal examiner granting interviews and hearings in a small room in which several of his assistants are working is not calculated to make for efficiency. A plan by which a division would be arranged to occupy more space than is now given and to furnish separate compartments with glass partitions dividing an office so that the examiners could avoid inter-

ruption except when their attention was required would be of great benefit to the work. Such an arrangement of rooms would be possible in a new building, but in the present quarters there is nothing that can be done except possibly to limit or entirely do away with personal interviews sought by attorneys and others with examiners. Under better conditions such interviews might be limited and controlled with benefit both to the applicant and to the office.

SUBJECTS COVERED IN THIS REPORT.

The following subjects are discussed in the subsequent chapters of this report, and the recommendations will be found in connection with the discussion of each subject:

Administration.
Methods of examining applications.
Interference procedure.
Classification Division.
Library and search room.
Personnel.
Building accommodations and office equipment.
Publications.
Term of patent and delays.
Fees, revenues, and expenditures.
Miscellaneous.
Views of patent attorneys.

CHAPTER 2.

ADMINISTRATION.

The first patent law, that of April 10, 1790, authorized the Secretary of State, the Secretary of War, and the Attorney General, or any two of them, to grant patents for any such "useful art, manufacture, machine, or device, or new improvement thereon not before known and used, if they shall deem the same sufficiently useful and important." Under this law about 50 patents were granted.

On February 21, 1793, Congress repealed the act of 1790, and authorized the granting of patents on the registration plan, under which a patent was granted as a matter of course, and without examination, upon the filing of a sworn application. The act of 1793 also provided for the avoidance of a patent if any larger claim was made than was lawful under the principles of common law. This registration system, as established in 1793, remained in effect until Congress passed, on July 4, 1836, an act providing for a system of granting patents after examination.

This law of 1836 is the basis for the present patent law. It provided for a Commissioner of Patents and one examiner, together with six other persons deemed necessary to perform the clerical and mechanical work of the office. The examiner reported the results of his investigation directly to the commissioner. The field of search comprised about 10,000 United States patents, about 7,000 British patents 5,000 French patents, and such technical books as were available. Thereafter and from time to time additional examiners became necessary as the volume of work became too great for the commissioner to give personal attention to all cases.

In 1848 the law provided for a total of four principal examiners and four assistants. The field of search had grown to 16,000 United States patents, together with 30,000 British and French patents and the scientific literature of the day.

The act of March 2, 1861 (12 Stat., 246), provided for a board of examiners in chief, composed of three members, in order to secure "greater uniformity of action in the grant and refusal of letters patent," such board to revise and determine upon the validity of decisions made by examiners when adverse to the grant and to relieve the commissioner of some of the appellate work.

In 1870 the office of Assistant Commissioner of Patents was created. The position of examiner of interferences, whose duties had previously

been performed by the examiner in charge of the class of invention to which the interfering application related, was provided for in the law of 1870. In 1874 the grade of third assistant examiner was created, and in 1882 the grade of fourth assistant examiner.

In 1872 the examining corps had increased in numbers to 66, and in 1877 to 88, and the total number of employees, which in 1836 was 7, to over 400. At the present time the examining corps includes nearly 400 examiners and the total office force numbers 939 persons. The field of search covers more than 1,000,000 United States patents and more than 2,000,000 foreign patents, and the literature has grown enormously. The development of patent systems and the increase in the number of patents issued has rendered more and more difficult each year the making of a complete search of the state of the art. For a more detailed history of the development of the patent system, see Appendix A to this report.

PRESENT FORCE OF OFFICERS AND EMPLOYEES.

The present force of the office, with the annual salary of each of the principal positions, may be briefly shown, as follows:

1	Commissioner of Patents	$5,000
1	first assistant commissioner	4,500
1	assistant commissioner	3,500
3	examiners in chief	3,500
2	law examiners	2,750
1	examiner of classification	3,600
1	examiner of interferences	2,700
1	examiner of trade-marks and designs	2,700
6	assistant examiners of trade-marks and designs	1,500
43	principal examiners	2,700
63	first assistant examiners	2,400
73	second assistant examiners	2,100
88	third assistant examiners	1,800
110	fourth assistant examiners	1,500
1	chief clerk	3,000
1	financial clerk	2,250
6	chiefs of divisions	2,000
3	assistant chiefs of divisions	1,800
1	librarian	2,000
1	translator	1,800
532	clerks, draftsmen, copyists, messengers, etc., at rates of pay from $360 to $1,800.	
939		

The duties of the principal officers of the Patent Office and of the examining force are briefly stated in chapter 7 on personnel, while in Appendix G to this report is given in some detail a statement of the work done in examining applications. In this chapter such detail is given as relates to the subject of administration.

THE PATENT OFFICE AS AN INDEPENDENT BUREAU.

A question of very considerable importance in connection with the administration of the Patent Office is that relating to the administrative authorities superior to the Commissioner of Patents.

The Patent Office has been a bureau of the Department of the Interior since the creation of that department in 1849, covering the entire period of the great activity of the office. The nature of the business committed to the Patent Office has no relation to other work carried on in the Department of the Interior nor, as a matter of fact, is there any particular connection between the work of the several bureaus in that department. There is no good reason why the Patent Office should be transferred from the Department of the Interior to any of the other executive departments. Its work is so independent of the other activities of the Government that it can be as well carried on under one department as another.

The question has been raised many times as to the advisability of making the Patent Office an independent bureau. In 1903, when the Department of Commerce and Labor was created, consideration was given to the subject of transferring the Patent Office to that new department. The control of the Secretary of the Interior over the work of the Patent Office is merely nominal; no appeal lies to him, nor has he any authority to control the decisions of the Patent Office. He is charged with the duty of appointing all employees of the Patent Office, but these appointments are subject by law to the nomination of the Commissioner of Patents. The Secretary has supervision of the disbursement of appropriations for salaries in the Patent Office and appropriations made for the repair and maintenance of the building in which the Patent Office is located, and the appropriations for furniture, equipment, and miscellaneous expenses of the Interior Department are expected to cover the needs of the Patent Office as well as of many other bureaus in the department. It is but natural in this department, as in other executive departments where one appropriation is made for the Secretary's office and numerous bureaus, that in the allotment of equipment and supplies, as well as in the repair of the building, the needs of the clerical force attached to the office of the head of the department will be given preference over the needs of clerks or officials of similar or higher rank in bureaus of the department, even when a bureau like the Patent Office occupies rooms in the same building as the Secretary's force. It is noticed that in the Interior Department Building, more than three-fourths of which is occupied by the Patent Office and the remainder of the building by the Secretary and his divisions, the state of repair of the floors, walls, etc., and the condition of the furniture and equipment provided for the occupants of the one-fourth is very much better than that provided for the occupants of the three-fourths.

It would not be advisable to have two different authorities in control of one building as to maintenance, heating, lighting, etc. But when the Patent Office shall have been moved into a building especially adapted to its needs, it is believed that every consideration of good administration and of the building up and improvement of the office to the highest state of efficiency will demand that it be made in fact an independent bureau, subject to the supervision of the President where any supervision is needed.

DUTIES OF THE COMMISSIONER OF PATENTS.

An examination of the law which is set forth in Appendix B of this report indicates only in a general way the duties of the Commissioner of Patents. He is required, under the direction of the Secretary of the Interior, to superintend or perform all duties respecting the granting and issuing of patents directed by law and to have charge of all books, records, papers, etc., belonging to the office. He is authorized to establish regulations not inconsistent with law for the conduct and proceedings of the Patent Office. Many other duties are prescribed in a general manner. What are the duties actually imposed upon the commissioner can be ascertained only from a consideration of the character and volume of work that comes before the office. His authority as a supervising officer in charge of the technical work, in acting upon petitions, in directing the work of over 900 employees, and his quasi judicial work in deciding cases on appeal is so great that it is evident one man can not give careful consideration to any large part of the duties without neglecting or detailing to assistants the performance of all the other duties.

During the fiscal year ended June 30, 1912, there were 69,236 applications for patents filed in the office. When reissues, design patents, trade-marks, labels, and prints are included the total for the year aggregates 79,747. In Appendix I to this report statistics relating to the business of the office are set forth. The volume of appeal work coming to the commissioner during the year referred to is shown in the following statement:

	Filed.	Disposed of.
Appeals in interference cases	100	110
Appeals in opposition cases	13	13
Appeals in cancellation cases	4	1
Ex parte appeals	173	174
Interlocutory appeals	245	243
Ex parte appeals in trade-mark cases	68	55
Total	603	596
Petitions to commissioner	2,600	2,599

The petition is an instrument praying the commissioner to compel a subordinate official to act in a particular and specific manner on the question of difference of opinion between an applicant and the office on a question of form or praying the grant of a request of an applicant in connection with some case in the office when the request does not relate to the merits. The appeal is a statutory procedure to secure a review of the action of a subordinate tribunal and relates to the merits of a case. Petitions may relate to the reviving of an application, to reopening a rejection, to the acceptance of a substitute specification or drawing, to the questions of informalities in the petition, oath, or specification, to the return of money in certain cases, to the making of amendments after allowance of an application, to the question of limit of time for appeal in interference cases, to correction of patents, etc. Petitions are acted upon by the commissioner or one of the assistant commissioners, and principal examiners are bound by the action taken.

The supervisory power of the commissioner is exercised in connection with his action upon petitions and by instructions to subordinates in different ways.

In connection with the action upon the merits, it is held by the commissioner that he is authorized to direct the principal examiners to allow any or all claims under an application, and that his authority is not in any way confined to the procedure on appeal under section 4910 of the Revised Statutes. It is also held by him that under the law he has authority to refuse to issue a patent when the application has been allowed and passed to issue by the principal examiner. As a practical question, the allowance by a principal examiner is the final action of the office. The statutory authority for reviewing the action of the principal examiner on appeal to the board of examiners in chief and from that board to the commissioner refers specifically to applications which have been rejected by the examiner. While the commissioner may have the power to review the favorable action of a principal examiner, he does not have the time necessary to examine the more than 100 applications that are passed to allowance every day. The result is that almost without exception the action of any one of the 43 principal examiners in allowing an application is final so far as the Patent Office is concerned, and the patent issues as a matter of course.

ACTION BY 43 PRINCIPAL EXAMINERS.

It is generally conceded that the fact that each of the 43 principal examiners is in practice the final authority when he decides a patent should issue has caused a serious difference in the character of patents issued by the office. It is generally believed also that this radical difference of opinion existing among 43 men acting independently has

caused the issue of a very large number of patents that are invalid. When it is considered that the supervision of the commissioner over the favorable actions of these 43 principal examiners is, and must be under existing conditions, merely nominal, and when it is remembered that as a rule the direction of the work of a division over which a principal examiner presides is more than can be thoroughly done by one man, it is not surprising that many invalid patents are issued. A principal examiner who has charge of the work of seven or eight assistants is responsible for the action taken in his division, and is authorized to sign an allowance of patent for the commissioner, can not give much time to the consideration of each case in order to decide whether the application should be allowed or rejected upon the search that has been made by one of his assistants.

To expect the commissioner to directly supervise and control the action of principal examiners in the allowance of applications is to expect something that is impossible, unless the commissioner be given such assistance as will enable him to issue and enforce instructions from time to time to the examiners as to the methods of work and the character of claims that are patentable.

All the administrative work of the Patent Office should be centered at the desk of the commissioner. He should be kept most minutely informed of the progress of the work of the Patent Office in all its divisions. He should personally know exactly what is being done in every branch of the work and direct it all. To be able to do this, it will be necessary for him to have the assistance of those who have or acquire expert knowledge of the matters handled in the several divisions of the office. It is unreasonable to expect that any commissioner can have the knowledge to qualify as an expert in the difficult and technical work of every division of the office.

The commissioner is assisted at present in his mixed administrative and judicial labors by two assistant commissioners. There is the same confusion in their duties that there is in the commissioner's, and even were their judicial functions taken away from them it would still be physically impossible for two persons, however highly endowed as technical experts, to know the details of work carried on in all the divisions of the office. It is the opinion of this commission, therefore, that it is absolutely necessary, in order to secure a strongly centralized administration, that the Commissioner of Patents be assisted by a number of supervising examiners, whose duty it should be to keep him advised on the work of the office. These employees should number at least seven. They should have neither administrative nor judicial power, but by keeping the commissioner informed of the work in every branch of the office it would concentrate all administrative authority in his hands and help him to exercise it wisely.

The commission, after careful study of the duties imposed upon the Commissioner of Patents, has reached the conclusion that no substantial improvement can be expected in the character of patents that are granted by principal examiners until the commissioner has an opportunity to devote his time to supervising the work of the office and is relieved from the burden of deciding individual cases upon appeal. No relief from the existing situation can be had by increasing the number of assistant commissioners to take a part or all of the judicial work.

The law contemplates that from adverse decisions of the board of examiners in chief an applicant may appeal to the commissioner in person. The volume of appellate work has become so great that appeals are divided between the commissioner and his two assistants and the preparation of opinions is delegated to some extent to law examiners. It can hardly be said that under present conditions an appeal to the commissioner in person is in fact sccured. That uniformity of decision on the merits which, in the early days, it was intended to secure by appeal to the commissioner in person can not be had. The work has outgrown the organization.

RECOMMENDATION AS TO APPEALS.

The commission is of the opinion that the commissioner and assistant commissioners should be relieved of judicial work; that the appeal to the commissioner should be abolished; that all appeals in the office should go to the board of examiners in chief, which board should be increased to five members and its duties confined to judicial work; that the decisions of the board should be binding upon the office; and that the members of the board should be appointed by the President.

The recommendation made to relieve the commissioner and his assistants of judicial work is not a new one, as after reaching that conclusion the commission found that somewhat similar recommendations have been made by former Commissioners of Patents.

FORMER RECOMMENDATIONS.

In a special report of the Commissioner of Patents dated February 23, 1872, which was transmitted by the President to Congress, the commissioner referred to the fact that under the expansion of business the number of examiners had grown to 66; that the commissioner had been obliged to abandon all attempts to give personal attention to any applications except such as came to him on appeal from adverse decisions of the examiners; that when an examiner decided to pass a case to issue there was no review of his decision unless by accident the commissioner's attention was called to it, which

very seldom happened. The same thing, he stated, was true in rejections except when the appellant paid an extra fee and took an appeal, with the result that many patents were issued which should never have been granted; others on good inventions were issued in improper form and with bad claims; and many applications covering valuable inventions were rejected and lost to worthy inventors. The following extracts from the report referred to present a few of the difficulties which were then apparent to the Commissioner of Patents:

The theory of the American system is to grant only valid patents, and at a cost so small as to make them obtainable by inventors of very small income. Under the protection of these patents, manufacturing is opened to the inspection of the world, and when the patents expire the public may understand the processes and make the devices * * *.

Many inventions which at first appear very trivial turn out to be of great value, and others, which at first excite hopes of great value, prove, upon trial, to be utterly worthless. Undoubtedly very many patents are issued upon inventions having no value to the inventor or anyone else; but experience has shown that such patents do no harm. If an inventor is willing to incur the expense of obtaining a valueless patent, he, being the only one to suffer, should be left free to judge for himself as to the propriety of such expenditure.

Patents on valueless inventions are harmless; but not so with such as interfere with existing patents, or with processes and manufactures already known to the public.

The theory of our system requires a thorough expert examination before a patent is issued, and a final rejection of all applications that do not present proper matter for valid patents. Many applications, embracing important and valuable inventions, are accompanied by faulty descriptions and by claims much broader than the invention—so broad as to invade patents granted to others, and often cover what is already well known to the public. It is the duty of the office to ascertain just what is new and useful in the applicant's invention, and then to limit the description and claims to that of which he is really the first inventor. A patent thus limited is the most valuable to the inventor, and the least restrictive upon manufactures and trade * * *.

The commissioner has been obliged to abandon all attempts at giving personal attention to any applications, except such as come to him on appeal from adverse decision of the examiners, and, under the present organization, the examiners necessarily have authority to reject applications or to pass them to issue. When an examiner decides to pass a case for issue there is no review of his decision, unless by accident the commissioner's attention is called to it, which very seldom happens, as the proceedings are secret and ex parte. The same is true in rejections, except when the applicant pays an extra fee and takes an appeal. The result is that many patents are issued that should never be granted; others, on good inventions, are issued in improper form and with bad claims; and many applications covering valuable inventions are rejected and lost to worthy inventors.

With so many tribunals authorized to give final decisions there can be scarcely an approximation to uniformity of practice on the very matter where accuracy and uniformity is most to be desired. This evil has become so great as to furnish to many persons an argument against the entire system of preliminary examinations. The fault, however, I am fully convinced, is in the organization of the examining system, and not in the system itself. The fault in the present organization is more serious and fundamental than the mere want of uniformity in decisions * * *.

While all the examiners could report in writing upon each application directly to the commissioner, and he review the reports, determine the legal points, and finally decide to issue or reject, uniformity was possible. The review by the commissioner

was an incentive to thoroughness and fairness upon the part of the examiners, and the knowledge the examiners had of each case was a check upon the commissioner. The immense proportions to which the business of the office has since grown renders it impossible to return to the simple organization of its infancy; but I believe the remedy for existing evils must be sought in that direction.

In 1877 the Commissioner of Patents called attention to the increase in the number of examiners to 88 and the number of applications to over 20,000 per annum and expressed the opinion that the commissioner should be relieved of judicial duties on the ground that the duties of the commissioner were not only too many but were incompatible; that the watchfulness, care, and constant supervision required of the executive officer were inconsistent with the exercise of the judicial qualities necessary for the consideration of the questions brought up by appeal. An extract from the Report of the Commissioner of Patents for the year ended December 31, 1877, is as follows:

Under the present organization of the office there is no hope of greater uniformity and no possibility of more careful supervision. It was proposed some years ago to accomplish this by grouping the classes, so as to place the granting of patents in fewer hands, but the scheme was never put into practice. It is impossible for the commissioner to supervise personally one in a hundred of the patents issued. His duties are too diverse and numerous, and should rather be abridged. In fact, the business has outgrown the organization * * *.

Such a tribunal has been suggested, of the nature of a patent court, to be established in connection with the office, and to be composed of three members, appointed as other judges of the United States courts are appointed. To such a court all appeals from the adverse decisions of the examiners might be directly taken. This would save one appeal, would relieve the commissioner of all judicial duties, and would bring into direct connection with the office a permanent judicial head. The commissioner might then, with the other assistance already provided by law, inspect the patents which he signs, and refer to the court for revision such as might seem to him improper to issue.

I know of no plan which promises better than this to correct the evils arising out of granting patents for things which ought not to be patented. The law of 1836 provided for an examination as to novelty in order to guard against "the granting of patents for everything indiscriminately." The amendments now proposed are in the same direction, and contemplate more careful and uniform examination and complete supervision in allowing patents.

The evils complained of under the present system are not occasioned by patents granted to true and worthy inventors, but by worthless patents. They are not essential to the system, but incidental to its rapid growth, and trifling in comparison with the benefits bestowed * * *.

Other Commissioners of Patents have urged the necessity for relieving the head of the office of the decision of individual cases.

The two reports from which extracts have been made indicate clearly the difficulties which existed nearly 40 years ago because of the volume of work in the office. If such conditions existed when the examining force numbered 88 and the number of applications per annum was 20,000, it would seem that with the present

examining force of about 375, and applications of more than 70,000 per annum and without any change in law or methods of work, the results as shown in the character of patents issued would be worse than they were at a time when the work of the office was not more than one-fourth of that of the present day. No doubt the class of examiners now employed has been all that has prevented the breaking down of the system. It does not seem to require proof to justify the assertion that a great many invalid patents are issued annually, and that patents are issued from some divisions of the office and signed by the commissioner that would not be issued if they had been examined in other divisions.

It seems to the commission remarkable that conditions concerning the validity of patents issued is no worse than it is, and that the demand for abandonment of the examination system has not been more insistent. No criticism is made of the commissioner, nor of the other officers and employees of the office. The system is to blame for some of the results; inadequate force and insufficient accommodations and equipment are responsible in large part.

It would seem that if the present methods of doing the work in the office are continued, the character of the work turned out will continue to deteriorate. In other chapters of this report questions relating to the personnel, to building accommodations, to equipment, to classification of patents and digest of publications, are considered and recommendations made. It is the purpose here to discuss only the proper organization of the office and the change of methods that will result in the most efficient work in passing upon applications.

PROPOSED PLAN OF ADMINISTRATION.

The Commissioner of Patents should be charged with all the duties now required by law except those which relate to the decision of cases on the merits on appeal. He should be assisted by one assistant commissioner who should act as commissioner in the absence or disability of the commissioner. There should be provided a force of supervising examiners or inspectors who should be directly under the commissioner and perform such duties of inspection and supervision only as might be assigned to them by the commissioner, but without authority to direct the work of examiners. They should examine the character of work as well as the quantity being performed in the several examining divisions and by individual examiners, and should report their recommendations to the commissioner. It should be the duty of the commissioner to issue from time to time such instructions in regard to the methods of examination and of performing the technical and clerical work of the office as he might deem necessary to keep the office up to the proper standard of efficiency.

Under such a plan it is believed that the commissioner and assistant commissioner could be informed at all times of what was being done in each division, and by means of instructions as to methods could make certain that there was uniformity in the character of work turned out from all branches of the office.

Another duty of the commissioner under such a plan would be to order any case passed for allowance by a principal examiner to be reviewed summarily and without a hearing by the board of examiners in chief. Should the board on review decide that the application should be rejected, that action would be taken by the principal examiner, subject to an appeal by the applicant to the board as in other cases of rejection.

It has been suggested that a force of about eight supervising examiners be employed with the duty of supervising five or six divisions each, and consulting with and correcting the work of the principal examiners in charge of such divisions. A similar plan was recommended by the Commissioner of Patents in 1877. He proposed nine chiefs to decide upon the examination work of the examiners. The commission is of the opinion that such a plan would result only in establishing what is practically another appeal between the principal examiner and the board of examiners in chief, or would result in the supervising examiner taking the responsibility for such a large number of cases that he could not give them proper attention. The duty of a principal examiner is now sufficient for one man and ought, in fact, to be reduced if the best results are to be obtained. To make him in effect the subordinate of the supervising examiner would relieve him of responsibility and place that responsibility upon the supervising examiner whose judgment in passing on five times as many cases as the principal examiner, would not be of great value.

The commission is of the opinion that no officer or tribunal between the principal examiner and the board of examiners in chief should be created. It is convinced, however, that there should be a closer supervision over the action of principal examiners, especially in the grant of patents, and that that supervision should be exercised by the Commissioner of Patents with the aid of seven supervising examiners acting under his direct instructions and sitting together in considering and reporting to the commissioner on questions of method and procedure. With such a force of competent men the commissioner would be able to perform many of the duties which it has been impossible for him to perform in the past. Such duties relate to the important subjects of difference of opinion as to what is patentable, variation in methods of examining, and deciding the merits of applications for patents, and the issue of patents that ought not to issue.

BOARD OF EXAMINERS IN CHIEF.

The desirability of eliminating one appeal in the office is clear. The commissioner has recommended this for many years, and it appears from the examination which the commission has made that this reform is favored by attorneys, inventors, and others who have business with the office. While it is the opinion of a few that a large number of appeals in ex parte cases is beneficial because the applicant does not have to take all the appeals unless he wishes to, on the other hand it is certain that a multiplicity of appeals delays the work of the office, increases the expense to litigants, and necessarily influences appellate tribunals in the character of work done because of the fact that further appeals are open to the applicant.

Without setting out at length the evidence upon which it has reached the conclusion, and in view of the fact that the sentiment is almost unanimous in favor of abolishing one appeal, the commission believes that the only appeal in the office should be to the one board of appeals known as the board of examiners in chief. At the present time that board is behind in its work and cases are being set for argument four or five months ahead.

EXERCISE OF JUDICIAL FUNCTIONS.

All judicial functions should be lodged exclusively with the corps of examiners and the board of examiners in chief. The decisions of this board should be final within the Patent Office on all questions of patentability and priority of invention. There should be no appeal to the Commissioner of Patents or to any other authority except the Court of Appeals of the District of Columbia. The reason for this recommendation is that it would greatly shorten the procedure to final adjudication and in no way impair the rights of appellants. It is not reasonable to allow the decisions of a technical body having judicial powers to be overruled by one officer who may have neither the technical nor the legal training to qualify him to exercise such authority. Commissioners of Patents are always likely to be appointed for political reasons rather than because of any particular technical knowledge. On the other hand, the members of the board of examiners in chief are appointed to their places for the very reason that they do have, and are required by law to have, the special knowledge necessary to enable them to decide wisely where matters pertaining to patent rights are in dispute. It is unreasonable, therefore, and unwise as a matter of public policy, that the organization of the office should permit the overthrow of their decisions by one not necessarily qualified to pass judgment in the matter.

The work of the present board of examiners in chief is not current. Although it sits every day from 1 o'clock p. m., except on Saturdays,

and often extends its hearings beyond the regular office hours. cases are being set for hearing nearly six months from the time when appeals are filed. The only time available for the study of cases and preparation of decisions is from 9 a. m. until 12.30 p. m., which is entirely insufficient to enable the work to be done properly. and it is impossible to give the cases that joint consideration which was intended by the law by which the board was created. It is believed that by increasing the board to five members and by relieving its members from all other duties than the one of hearing appeals and reviewing, on the order of the commissioner. the favorable action of principal examiners as hereinbefore set forth. the board will be enabled to keep its work up to date so that. as a rule and with few exceptions. an appeal can be filed and a hearing and decision had within from one to three months.

APPOINTMENT OF EXAMINERS IN CHIEF.

The office of examiner in chief was created in 1861. and the members of the board have always been appointed by the President by and with the advice and consent of the Senate. It is recommended that such appointment be made by the President alone. and it is to be expected that. as in the past. appointments as examiners in chief will be made. almost invariably. from the best qualified men in the office.

The commission is of the opinion that the duties of the board should be specifically stated in the law. and that the commissioner should not have authority to assign other duties to the board. nor should he have any control over their actions. While the President would no doubt charge the Commissioner of Patents with the duty of reporting to him any neglect of duty on the part of an examiner in chief. yet it is believed that the selection of members of this board ought to be made by the President upon such examination or independent inquiry as he might cause to be made when occasion arose for appointment.

The commission has seen no evidence that the present commissioner or any of his predecessors has attempted to control the actions and decisions of examiners in chief. although it is probable that most of the appointments to membership on the board have been made upon the recommendations of the different commissioners. If. as is recommended. the Commissioner of Patents is to be relieved of the responsibility for the decision of individual cases and but one appeal is to be had in the office. it is evident that the board. whose decision would be final in the Patent Office. should be as free from any suspicion of control in judicial work as is any court. Only in this way can the best work be obtained from the board and the confidence of those having business with the office be maintained.

CLERICAL DIVISIONS.

Other divisions of the office having a part in the detailed work of its administration are the following clerical divisions:

Publication.
Assignment.
Issue and Gazette.
Manuscript.
Mail and Files.
Financial.

As a result of such investigation as has been made of the work in these divisions, some changes might be made with benefit to the service, such as combining the work of two divisions, in other cases bringing the work of a division together in adjoining rooms, where it is now scattered over the building. These changes, however, are so dependent upon sufficient office room that the commission has not been able to make definite recommendations. If it is possible for the Patent Office to secure a number of additional rooms in the building it now occupies, or it is found practicable to locate some division of the office in another building, it is believed that the space thus gained can be used to good advantage in improving the administration of that part of the office having to do with clerical work and the performance of the business functions as distinguished from the examining work. In chapter 8 on Building Accommodations, the subject of additional space is discussed, with the recommendation for a new building especially adapted to the needs of the office, and recommendations are there made for temporary relief from the existing conditions.

The questions involved in the best form of organization for the clerical work must be solved with due consideration for the fact that improvements of minor importance may not pay under present conditions and those of greater importance will require enlargement of space in which to work and the introduction of equipment, raising at all points the necessity for specially designed quarters.

CHAPTER 3.

METHODS OF EXAMINING APPLICATIONS.

In chapter 2 on Administration, chapter 4 on Interference Procedure, and chapter 7 on Personnel the commission has discussed some of the phases of doing the technical work of the Patent Office; that is, the examination of applications for patents and the methods pursued in reaching a decision to allow or to reject such applications, as well as the determination of the question of priority.

In Appendix G is given in some further detail a statement as to the course which an application takes through the various divisions of the office until the patent is issued or the application is finally rejected and the papers placed in the permanent files of the office.

In view of the fact that applications for patents cover improvements in every known art, it is not possible that the methods employed by the examining force can be made uniform; in fact, it would be an extremely difficult task to adopt fixed rules for the mental processes of those examiners who in practically all cases finally determine what patents shall issue. There must necessarily be a wide discretion given to the principal examiner as to the methods by which he will arrive at conclusions. This is true, of course, in any judicial, scientific, or other technical work.

STANDARDIZATION OF METHODS.

There are, however, many phases of the work of the assistant examiners, and to a more limited extent of the work of the principal examiners, in which it would be possible to formulate at least a few more definite methods of searching the state of the art and of doing those things which are necessarily done daily and almost hourly by the more than 300 assistant examiners. Each of these examiners may be engaged in searching the state of a different art, but all of them are engaged in the same character of work. It is a work that can be simplified by the adoption of certain rules regulating the methods they shall employ. By this it is not meant that the judgment of the assistant examiner or of the principal examiner as to the extent of the search to be made shall be controlled by set rules which he must follow in all cases.

In chapter 5 on the Classification Division the commission has pointed out the importance of the work of classifying patents and

printed publications and has urged a substantial increase in the force engaged upon that work in order that it may be completed within five years. It is believed that when this classification is completed and is available to all the examining force it will be found a substantial aid to the work of all of the assistant examiners, and particularly in the work of those who are new in the office and are assigned to examining applications involving an art with which they are not familiar.

METHODS OF OBTAINING A KNOWLEDGE OF THE LAW.

It was found in the course of this investigation that while the decisions of the Commissioner of Patents are published and are available to the examining force, the opinions rendered by the board of examiners in chief either affirming or reversing the rulings of the principal examiners are not published, and therefore the principles announced in the opinions of the board are not available to the examiners. Many cases decided by the board of examiners in chief are not taken on appeal to the Commissioner of Patents, and the unpublished views of the examiners in chief can not be given effect in cases other than the one under consideration, because they are not available.

If the recommendation made by the commission in chapter 2 on administration is acted upon favorably, the board of examiners in chief will be the only tribunal in the office to receive appeals, and of course their decisions will then be published and will be binding upon the examiners.

It is found that while the examiners are expected to be familiar with the patent law and with the decisions of the United States courts in patent causes, there is no method employed in the office by which the examiners can receive in digest form all the decisions of the courts. Each examiner has been left to his own devices in acquiring a knowledge of and applying the principles established in the decisions of the courts and of the Commissioner of Patents. While it is true that the principal examiner should be responsible for the decisions on questions of law arising in the work of his division, yet as a matter of practice, considering the large force of assistants under him, it is inevitable that the views of the assistant examiners will be acted upon frequently and be the judgment of the office in the grant of a patent.

The commission is of the opinion that the digesting of decisions that will be useful in the work of the office should be done currently by some one or more employees under the direction of the commissioner and be made available in the form of printed cards or otherwise, so that all examiners will have before them at all times a complete digest of the law with which they should be familiar.

In this connection it is reasonable to suppose that if a system of deciding upon promotions by examination is installed in the office,

as recommended by the commission in chapter 7 on Personnel, a digest of law will be essential, as it will be one of the subjects upon which the force will be tested. The present practice under which the examiners prepare for their own use, and as their private property to be taken with them when they leave the service, such digests and notes as they think of value and as far as their time for such work permits, is one that is not best for the office. It involves the doing of much of the same work by each of the examining force. To a considerable extent digests to satisfy the requirements of all could be prepared by one or two employees specially assigned to that duty.

CHANGE OF WORK OF EXAMINERS.

In addition to making available for the examining force a complete classification of patents and printed publications, to be kept currently revised, and the furnishing to them of digests of the law, it seems to the commission to be desirable, as a rule, that the examiners be assigned to and retained upon the work in connection with the class or subclass of patents upon which they can do the best work. While it may be true that many of the examiners would prefer to be changed from time to time from one class of inventions to another in order that they may receive a larger experience which would be valuable if they leave the office, yet the broader consideration of the efficiency of the office is of greater weight than the future of examiners who may prefer to go into the practice of patent law.

The keeping of a man upon one class or a small number of classes of inventions may have the effect of preventing his acquiring a complete and accurate knowledge of a large number of the classes of work in the office. The commission believes, however, that the Patent Office should develop as rapidly as possible a corps of principal examiners and others on the examining force who will be recognized experts in particular lines of work. With adequate compensation offered it is believed that the retention of experts in particular lines will go a long way in improving the character of patents issued by the office.

MANUAL OF INSTRUCTIONS.

In chapter 2, on Administration, it is recommended that the Commissioner of Patents be relieved of the decision of individual cases on the merits, and, with the assistance of seven supervising examiners, whose appointment is recommended, he should devote his energies to the administration of the office and the supervision of the manner in which the technical work is done in all the examining divisions. In this work of directing the examiners as to methods, and in instructing them as to the application to the work before them of the principles of law announced in decisions of the courts, it seems to the commission

very desirable that these instructions of the commissioner should be issued in a form to be available to all the examiners. It is believed that a manual of instructions ought to be prepared, and amended and revised from time to time. Such a manual would be useful not only in fixing the responsibility upon the examining force for following the instructions of the commissioner, but would be very useful in the education of an examiner upon his first entrance to the office.

In chapter 7, on Personnel, the commission has recommended that when a fourth assistant examiner is appointed from the civil-service register and is given the usual probationary appointment for six months, he be required to familiarize himself with the statute law relating to patents and with the rules of practice of the office, and that the question of whether or not he receives a permanent appointment at the expiration of the probationary appointment for six months be determined by an examination to test his ability as shown by the knowledge he may have acquired of patent law and office procedure. If he had available a manual of instructions or other form of statement by the Commissioner of Patents of the methods that should be employed by all examiners, and of the principles that should be applied in the decision of questions of patentability, etc., it would probably be less difficult to decide the question of whether or not a new employee should be appointed to the permanent force of the office.

COMPLETE FIRST ACTION.

It has been suggested that the examiners should be required to make the first examination of an application as complete as practicable, and that not only the formal objections but all references constituting objections on the merits should be communicated to the applicant in the first office action. This change in procedure, or rather enforcement of the approved practice of the office, is advisable in the opinion of the commission.

It is no doubt true that this method of examining applications would require more time in the first action taken by the examiner, and thus make greater the number of applications in the office awaiting action.

It would, however, put the case in such condition that it would not have to be gone over again by the examiner to refresh his recollection as to the points involved when the answer of the applicant is received, possibly a year later. Time would be saved in the end.

FORMAL REQUIREMENTS AS TO SPECIFICATION.

It has been suggested also that rule No. 64 of the Rules of Practice in the Patent Office (set forth in Appendix B) should be amended so as to require the applicant to answer the objections made by the

examiner in matters of form when the applicant makes his first reply thereafter. The rule referred to reads as follows:

> Where the specification and claims are such that the invention may be readily understood, the examination of a complete application and the action thereon will be directed throughout to the merits; but in each letter the examiner shall state or refer to all his objections.
>
> Only in applications found by the examiner to present patentable subject matter and in applications on which appeal is taken to the examiners in chief will requirements in matters of form be insisted on.

It frequently happens that formal objections to the specification and drawings are noted in the first office letter and repeated in each succeeding letter to the applicant or his attorney, who wait until the application is in condition for allowance or appeal before attending to such formal objections. This permits the application to be held in the office for at least a year after it is in condition for final action. as far as the merits are concerned, because the formal requirements can not be made final until the claims are in condition for final action. Unnecessary work is imposed upon the examiner, requiring him to repeat and check up in each office letter the formal objections and requirements made in previous letters. It is recommended that the rule in question be modified to require the applicant, when amending, to make his action responsive to formal objections or requirements as well as to matters relating to the merits of the invention.

DECREASING THE NUMBER OF PATENTS ISSUED.

The commission does not make any recommendations in reference to a subject which has been called to its attention and which has been discussed for many years; that is, the question of the desirability of decreasing the number of patents granted for what are called trivial inventions, so that the patents granted by the United States shall be only for inventions or improvements that are of value. The subject is closelv related to the subject of this chapter, and the remedy, if one is needed, is to be found in the perfecting of the methods of examination and in a change of law to give specific authority for refusing patents in such cases. In so far as the remedy is to be found in increased fees it is discussed in chapter 11.

PATENTS FOR COMBINATIONS.

A few patents for articles of manufacture which consist of integral devices, such as tools, are applied for, but probably 80 per cent or more of the applications filed are for structures or machines in which the claims are drawn to combinations of machine elements. The utility of any invention lies in the doing of something or in the making of something; that is, in the result accomplished.

A function or a result is not patentable, but only the means to the end—the means whereby the result is produced. If that means be a combination of mechanical elements, and if it be an invention at all the claim must accurately define only such combination as will produce a definite result. It should not contain too many or too few elements. For in the one case it would include elements that are no proper part of the invention, because they do not contribute to the result, and in the other case the combination is incomplete and would not produce the effect sought.

Section 4888 of the Revised Statutes requires that before an inventor or discoverer shall receive a patent "he shall particularly point out and definitely claim the part, improvement, or combination which he claims as his invention or discovery." It is certainly n t a compliance with this requirement to bury a novel element in a combination claim in which it performs no part different from that which it would in any other combination in which it is capable of use.

It is a well-established principle in patent law that there is no invention in merely aggregating elements; that is, assembling elements in an alleged combination in which each element performs its own independent function and the result is nothing more than the sum of the results due to the separate elements. If, on the other hand, the separate results of the elements are lost in a new and different result due to the combination, then such an assemblage of elements is a true and patentable combination, if novel.

It would seem, therefore, that when an alleged combination claim is presented for consideration, the first step would be to determine whether it is a combination or an aggregation. If it be the former, it is immaterial whether its elements are new or old, for it is a new entity and its novelty can only be negatived by a reference which discloses the combination. If it be the latter, it ought to be rejected for want of invention on its face, and it is not necessary to show that its elements are old, for whether new or old it involved no invention to put them together.

The commission has not had an opportunity to make a thorough investigation of the methods of the office in reference to this question, nor with reference to many questions involved in the technical work of examining patents. It would appear that a large amount of work now done is unnecessary. To eliminate it in connection with applications for combination patents, the procedure and methods of search in such cases must be changed by radical action taken under the power which now exists in the Commissioner of Patents. If a proper practice is followed, the Patent Office and the courts will find the work simplified and made more accurate, and inventors will receive the measure of protection to which they are entitled and no

more, while the rights of the public will receive a consideration which is now lacking to a considerable extent.

CONTROL OVER CHARACTER OF PATENTS ISSUED.

The commission believes that with some increase in the examining force of the Patent Office and the opportunity for supervision that will be given to the Commissioner of Patents under the plans herein recommended the control over the character of patents issued will be so much stronger that it will be possible—as the efficiency of the personnel of the office increases and as the laws and rules of practice are changed to tighten up the outlet through which patents issue—to avoid most of the complaints regarding the character of patents issued. The issue of a patent in the name of the United States should carry with it some assurance of validity until the time shall come in the development of the American patent system when any patent in the name of the United States will be beyond question, and will be of more than trifling importance and of real benefit to the public and to the inventor.

EXAMINATION OF TRADE-MARK APPLICATIONS.

In Appendix G to this report is a description of the methods of work of the Division of Trade-Marks and Designs, while in Appendix B is to be found the law and rules relating to trade-marks, designs, prints, and labels.

In response to the inquiry which the commission addressed to attorneys on questions relating to the law and procedure in applications for the registration of trade-marks, quite a number of attorneys complained of the procedure in the Patent Office and the methods employed. A number also advocated a radical change in the law so as to provide for the registration of trade-marks upon compliance with certain formal procedure only, leaving the question of the value of the trade-mark and the question of interference for decision in the courts. In view of the fact that the law was passed only seven years ago, after the report of a commission authorized in 1898 was made in 1900, this commission does not believe that the time has yet come for any radical change in the policy shown by the enactment of that law, and therefore makes no recommendation on the subject.

In addition to the six assistant examiners of trade-marks and designs provided for in the appropriation act, two assistant examiners from the regular examining corps are assigned to work in this division with special reference to the handling of applications for designs. It is believed that the force of six assistant examiners of trade-marks and designs should be increased to eight in order to do the examining work in a more satisfactory manner. The two assistant examiners

from the examining corps are in charge of applications for designs and also assist in supervising the examinations made by others in the division. They should be men particularly qualified for that class of work. The assignment of two or more assistant examiners from the authorized force of assistant examiners of the office is a matter of administration and involves the best use of the entire force of assistant examiners according to the needs of the work.

The Commissioner of Patents, in his report for the calendar year ended December 31, 1911, recommended that appeals from the examiner of trade-marks and appeals from the examiner of interferences in trade-mark cases go to the board of examiners in chief instead of to the commissioner. This is considered in connection with the question of abolishing one appeal in the office in chapter 2 of this report on the subject of administration.

CHAPTER 4.

INTERFERENCE PROCEDURE.

An interference is a proceeding instituted for the purpose of determining priority of invention between two or more parties claiming substantially the same patentable invention. The fact that one of the parties has already obtained a patent will not prevent an interference, for although the commissioner has no power to cancel the patent he may grant another patent for the same invention to the person who proves to be the prior inventor.

The statute concerning interferences is as follows:

SEC. 4904. Whenever an application is made for a patent which, in the opinion of the commissioner, would interfere with any pending application, or with any unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner or of the board of examiners in chief, as the case may be, within such time, not less than 20 days, as the commissioner shall prescribe.

The rules of practice contained in Appendix B show the procedure established in the Patent Office for carrying into effect the law just quoted. (See Rules 93 to 132, and 154 to 163.) The suggestion has been made many times that interference proceedings in the Patent Office should be abolished. It has been argued that the proceedings in the Patent Office are complicated and expensive; that the procedure is unnecessarily protracted; and that when an applicant has been conducted, against his will, through the several tribunals of the Patent Office and then to the Court of Appeals of the District of Columbia, and involved in a large expenditure of money, he finds that the contest must be renewed again in the courts with no benefit accruing to the successful party in the proceedings in the Patent Office. A statement in an opinion of the Court of Appeals of the District of Columbia is frequently quoted as follows:

From the simple and summary mode first adopted for determining the question of priority of invention, that proceeding, by system of Patent Office rules, has grown to be a veritable old man of the sea, and the unfortunate inventor who becomes involved therein is a second Sinbad the Sailor. It is known to all who are familiar with the practice in interference proceedings that by motions, petitions, and appeals of every conceivable character that the ingenuity of the skilled attorney can devise, interferences can be and are prolonged for years, to the injury of the public, and often to the financial ruin of the parties.

In connection with complaints concerning interference proceedings in the Patent Office, many of which complaints relate to the method of taking testimony and the expense of printing it, it is interesting to compare the method of taking testimony in patent causes in the United States district courts with the method employed in interference cases in the Patent Office. This subject is discussed later in this chapter. We will now take up the questions of the necessity for and value of interference proceedings in the Patent Office, and the delays caused by such proceedings.

NECESSITY FOR INTERFERENCE PROCEEDINGS IN THE PATENT OFFICE.

The inventor of any useful art, machine, manufacture, or composition of matter is entitled to a patent for the same if he is the first and original inventor thereof. This patent when obtained gives the right to sue anyone who may make, use, or sell the patented invention without the consent of the patentee, either for damages or for an injunction preventing the manufacture, use, and sale of the invention by the party sued. Without a patent the inventor may not maintain such a suit under the patent statutes.

It follows that the right to a patent is a very valuable and important one to the inventor. It also follows that the issue of a patent to one who is not the first inventor gives the right of suit to one who should not have this right. If two or more patents for the same invention are issued to two or more different parties, any manufacturer of the patented thing would be liable to suit successively by each of the patentees. As the question of infringement and validity is very often a close one, the defendants to such suits are often proceeding in the utmost good faith upon the belief that they are not truly liable to the patentee, and in many cases the final result of the suit shows that the defendants were right. It is a hardship upon the defendants in such cases to be subjected to the suit, both in the matter of the actual expense of the suit and in the matter of the injury to their business which such a suit often involves. It follows, therefore, that the issue of several patents for the same invention to different parties, thus multiplying the number of actions which may be brought against a single supposed infringer of the invention, is a serious matter and one to be avoided if possible.

Without an interference proceeding in the Patent Office, in which testimony may be produced by all of the parties interested, in the manner that testimony is produced in legal proceedings, the first inventor can not be accorded the patent which he is entitled to have and which is so valuable to him, and at the same time any number of other parties, each of whom also claims to be the first inventor, are to be denied patents upon the same invention. Any attempt to

decide between two or more rival claimants who was, in fact, the prior inventor would seem to be entirely vain unless these claimants were accorded the right to prove their cases in the same manner that parties prove their cases in courts of law or equity, and it would also seem to be impossible to do justice to the rival claimants if any party could prevail upon proofs of lesser force and sanctity than those which are required from litigants in the courts.

It is very difficult to determine satisfactorily the facts regarding the creation of an invention by a party to an interference even under the present system, where the inventor is produced and his witnesses are examined in the presence of the opposing parties and their attorneys and are subjected to the tests of cross-examination. The date of invention under the law, as the same has been interpreted by the courts, depends upon many facts. The principal facts are as follows: The date of the disclosure of the complete idea of the invention to others which is usually proved by testimony to sketches and drawings and models and may sometimes be proved by testimony to mere oral disclosures; the date upon which the complete machine was first successfully operated or the article was first successfully used or the process was first successfully performed; the fact that the inventor was diligent in his efforts to complete the invention and to demonstrate its practicability by a successful operation or use thereof; and the fact that the invention was not willfully concealed after its completion. All of these facts are not material in every case. It depends upon the special circumstances of each case which and how many of the above facts need be proved by any particular party. It is evident that the determination whether a certain alleged disclosure by an inventor to his corroborating witnesses did in fact comprise the complete idea of the invention in controversy or only something which more or less closely approximated the same is a difficult one, even where the witnesses are produced to testify in the presence of opposing parties and their counsel and subjected to cross-examination by them. It is even more difficult to determine whether a particular machine or article which is alleged to have been successfully operated at a certain time was in fact successfully operated at that time. Without the safeguard of cross-examination and confrontation it would seem to be impossible to determine with any reasonable degree of satisfaction which of several inventors was in fact the first inventor under our law of priority of invention as the same has become established by many decisions of the upper Federal courts. It is believed that any attempt to establish vital facts by means of ex parte affidavits or by means of questions formulated in advance and put to witnesses by notaries public or commissioners who were not acquainted with the case, and in the absence of the other parties or their attorneys,

would be practically useless. The party who could make the shrewdest statement of his case would obtain the award of priority as often as the party who was really entitled thereto, if not oftener.

The only great simplification of the determination of the question of priority between rival claimants which seems to present itself and which might be acceptable would be to hold that the first to file his application in the Patent Office completely disclosing the invention should be in law the prior inventor. Whether it would be acceptable to inventors and to the public is very doubtful. This change would simplify matters in the Patent Office, but would require a change in the law and would entirely upset all of the present ideas and practice regarding priority of invention. It would not do to apply such a rule in cases which turn upon originality or in which the first to file has fraudulently appropriated the invention of another, for section 4886 of the Revised Statutes requires the grant of the patent to the inventor. Our entire patent system is based upon this idea in contradistinction to the British plan of granting the patent to the first to introduce the invention into the realm. If, therefore, it is necessary to make an exception to the proposed law in respect to cases involving the questions of originality and fraud, which would cover probably one-half of the present interference cases, it would seem that the change would amount to nothing and the practice would be a vicious one.

THE VALUE OF INTERFERENCE PROCEEDINGS IN THE PATENT OFFICE.

As pointed out, interference proceedings seem to be necessary in order that the first inventor may have his patent and that others claiming to be first inventors, but who are not such, shall be refused patents, the refusal of patents to such others being necessary for the protection of the public from a multiplicity of burdensome suits.

Under the present practice in the Federal courts, whereby the question of priority may be reopened and retried de novo after the same has been finally disposed of by an interference in the Patent Office, the value of the proceeding in the Patent Office is much less than it should be. The value of the proceeding in the Patent Office would be immensely increased and there would be a great saving of expense and avoidance of litigation if the decision in the proceeding in the Patent Office upon the question of priority of invention were made by law final and forever binding upon all of the parties to that proceeding.

In this connection it must be borne in mind that interferences are now tried out in the Patent Office in the same way that suits are tried in the Federal courts. The parties and their witnesses are required to give their testimony under oath and in the presence of opposing parties and subject to the right of cross-examination. The

depositions are taken down by a notary public and sealed up by him and certified to the Patent Office. The decision of the commissioner is appealable directly to the Court of Appeals of the District of Columbia, which is coordinate in authority with the circuit courts of appeals of the United States. Why the decision reached in this proceeding should not forever bind all parties thereto it is difficult to explain. It would seem that so much of section 4915 of the Revised Statutes providing for further proceedings in such cases should be repealed, and likewise so much of section 4920 of the Revised Statutes as might be interpreted to authorize any further consideration of such matters.

TO WHAT EXTENT APPLICANTS DELAY ACTION AND CAUSE EXPENSE IN INTERFERENCE PROCEEDINGS.

In certain cases interferences may be disposed of in a few months and many cases in which no contest is made are thus quickly disposed of. Some cases, on the other hand, drag on through many years. The time required and the possibilities for delay can best be understood by a review of a typical interference proceeding from beginning to end, in which the various possibilities are customarily availed of by the parties or are unusual.

When any primary examiner finds that he has before him an application for patent which is ready for issue and there is another application for patent also before him disclosing the same invention and containing claims more or less closely approximating the same, the primary examiner suspends action on the allowed application and suggests the claims thereof which set forth the interfering subject matter to the other applicant, fixing a time limit of 20 days or more within which these claims must be made if an interference is desired. The claims are usually presented within the time fixed, but in exceptional cases one or more extensions of this kind are obtained through the offer by the party to whom claims were suggested of still other claims which, in the opinion of the examiner, would also be desirable in the interference. Such claims must be suggested to the first-mentioned party and made by him if they are to be included among the counts of the interference issue.

The primary examiner then prepares notices of interference for the various parties and these, with the files of the cases and a letter of declaration, are forwarded to the examiner of interferences. These are reviewed by the examiner of interferences in a cursory way, and if found formal the notices are sent to the parties, thus instituting the proceeding. The notice of interference gives the names of the rival claimants and the claims which define the invention in controversy, but it does not disclose the dates of the applications of the opposing parties.

After the notice of interference each party is required to file a sworn statement setting forth when he conceived the invention, when he first made sketches or drawings thereof and first disclosed the invention to others, and when he first reduced the same to practice and the extent of use of the invention. The time allowed for the preparation and filing of these statements is about 30 days, but if a party resides abroad the time is made greater. When the statements have been received, or when the time for filing the same has expired, they are examined by the examiner of interferences, and if in proper form notices are sent out fixing the time for the taking of testimony. In a great many cases, however, the preliminary statements of one or more of the parties are found to be defective and an opportunity to amend the same is accorded, thus adding several weeks to the time elapsing between the institution of the proceeding and the setting of times for the taking of testimony.

The notices in which the times for taking testimony are fixed provide that no testimony shall be taken within a period of one month from the date of said notice. Within this period the parties may bring the various motions which are authorized by rules 109 and 122. If motions are brought a hearing is had before the examiner of interferences to determine whether the motion is in proper form for transmission to the primary examiner. If transmitted, the primary examiner fixes a day of hearing, hears the parties, and renders a decision.

Motions are brought in a great many cases, perhaps in 75 per cent of those which are really contested. The time consumed before the examiner of interferences and the primary examiner in connection with such motions varies considerably, but probably averages in the neighborhood of three months, counting from the date of the notice fixing times for taking testimony. When motions are transmitted, the order setting times for taking testimony is set aside pending the final disposition of the motions. Certain decisions upon motions are not appealable. Many others are appealable. Some of the appeals lie to the commissioner direct; others lie to the examiners in chief. Decisions which are appealable to the examiners in chief, if affirmed, are again appealable to the commissioner.

In connection with these appeals much time is necessarily consumed, as the cases must be set for hearing upon the dockets of the examiners in chief and of the commissioner, according to the condition of such dockets. After the hearing the cases have to wait their turn before they can be taken up for decision. Appeals to the board and to the commissioner will therefore usually consume several months. In exceptional cases it is necessary to remand the interference to the primary examiner for further decision, which may be followed by a

new course of appeals. In such cases two or more years may be consumed in disposing of the preliminary motions. There have been cases where mandamus proceedings were instituted in the Supreme Court of the District of Columbia, based upon the action of the commissioner in connection with such motions. These mandamus proceedings have been taken to the Court of Appeals of the District of Columbia and to the Supreme Court of the United States, consuming several years, throughout which the interference stood still in the Patent Office.

After the preliminary motions have been disposed of, that is, after a delay of from one month to several years and averaging perhaps in the neighborhood of six months or one year, if the interference has not been thereby finally disposed of times are again set for the taking of testimony. If there are but two parties to the interference the time allowed will be about three months. This time is usually extended by agreements between the parties, approved by the Patent Office. The time allowed for the taking of testimony for one party is often extended upon stipulation as much as six months and sometimes as much as a year or more, and then the other party may seek and obtain like extensions of his time. Where a party seeking an extension of time for the taking of his testimony can not obtain the consent of his opponent he may seek such extension by motion, which is granted as a matter of course if it be shown that the party could not have taken his testimony in the time allowed. It thus appears that in the taking of testimony a period will be consumed which varies between three months and something over a year in the ordinary two-party interference. As many interferences contain three active parties and as the number of parties sometimes runs up to six or more, it is seen that in many cases the time for taking testimony naturally spreads itself over a great many years. When the cases are thus prolonged, it often happens that motions based upon unusual grounds are presented during the taking of testimony, which often interrupt the proceeding and cause further delay. The decisions on such motions are often appealable.

The final hearing is usually had about three months after the completion of the taking of testimony. In this time the parties must print their records and prepare and file their printed arguments. This time is often extended in connection with motions to reopen the case or to strike out testimony or to dispense with printing or for numerous other objects. After the final hearing several months are often required for the consideration of the case by the examiner of interferences and for the preparation of his decision. After the decision delay is sometimes had in connection with rehearing, but not often. Only 20 days is sometimes allowed for the filing of an appeal to the examiners in chief. When such appeal is filed, the case

must take its turn upon the docket and several months will thus elapse before the case can be heard. After hearing it may be some months before the same can be reached and decided. A similar lapse of time is necessarily incident to a further appeal to the commissioner. After the decision of the commissioner, an appeal may, within 40 days, be filed in the Court of Appeals of the District of Columbia. Here, again, the case must take its turn upon the docket and await its turn for decision, anywhere from a few months to a year or more being consumed in connection with this appeal.

Interferences are often delayed through the appearance in the Patent Office of a new party claiming the same invention while the interference is in progress. It is often necessary to suspend the pending interference to add the new party thereto, and in connection with the addition of this party much of the ground covered by the preliminary motions may be gone over a second time. Delays occasionally occur through the discovery of some new ground for rejection, necessitating the remanding of the case to the primary examiner for proceedings which usually take place when a motion for dissolution is brought, the decision of the examiner being appealable under certain circumstances to the examiners in chief and to the commissioner.

It is not seen how any considerable portion of the procedure above outlined could be eliminated without detriment to the interests of the parties or to the public. It is largely a matter of individual judgment whether the motions which may be brought might be restricted in certain directions and whether some of the appeals which are now permitted in connection with such motions might not well be prohibited.

The one great item of delay that seems the least justifiable is found in the fact that two appeals are permitted in connection with many of the motions and from the final decision, namely, an appeal to the board and an appeal to the commissioner, where one appeal would seem to be adequate for all practical purposes.

Some minor saving of time might be effected by requiring primary examiners to set motions for hearing at early dates and to promptly dispose of the same. Considerable time might be saved by holding parties to a prompter production of their proofs than at present, refusing, for example, to permit any extension of the month ordinarily allowed for the taking of testimony by a certain party beyond a period of say two or three months, without a showing that such extension is absolutely necessary in order that justice may be done. However, such requirements would be regarded by inventors and their attorneys as great hardships.

THE TAKING OF TESTIMONY IN INTERFERENCE CASES.

Rules 114 to 163 of the Rules of Practice of the Patent Office (Appendix B of this report) direct the manner in which testimony in interference and other contested cases shall be taken in the Patent Office. The rules are specific on the subject, and have been made to follow the practice in the taking of testimony in equity cases in the district courts of the United States. Many attorneys complain that the manner of taking testimony for use in the Patent Office is unnecessarily expensive; that there is great need for simplification in this particular; and that the requirement that the testimony taken in interference cases shall be printed should be done away with. It is argued that while the Court of Appeals of the District of Columbia, to which an appeal lies from the Patent Office in interference cases, may continue to insist upon the printing of the record of cases appealed to that court, yet in view of the fact that comparatively few of the interference proceedings instituted in the Patent Office ever go to that court, most of them being ended with the appeal to the board of examiners in chief, or the appeal to the commissioner, the printing of testimony should be required only of those parties who take the appeal to the court of appeals.

It has seemed to the commission, on such examination as it has been enabled to give the subject, that there is much force in this argument. Applicants for patents are drawn into interference proceedings by the action of the Patent Office, and if they are not financially able to carry on the contest, made more burdensome by the Patent Office requirement for printing of the testimony, they must frequently abandon their applications and allow the other and financially stronger party to win the decision. It is also contended that many interferences are dissolved after the taking of testimony, and many of such interferences ought not to have been tried. In such cases, when testimony has been taken, the additional burden of printing it is one that represents a total loss to the applicant.

The commission believes that the rules of practice in interference cases can be and should be simplified, and that serious consideration should be given to the question whether the requirement of printing the testimony and briefs in such cases for the use of the Patent Office should not be discontinued.

In connection with the recommendation made in chapter 2 of this report, for the abolishing of an appeal in the Patent Office—a change which would expedite the settlement of interferences—it is believed that the opportunity will be afforded to simplify the procedure on motions, etc., to a considerable extent.

NEW EQUITY RULES OF THE SUPREME COURT.

In connection with complaints concerning the complexity of the interference procedure and the almost innumerable motions and interlocutory appeals, it is to be noted that the Supreme Court of the United States, after long consideration, has amended the "Rules of Practice for the Courts of Equity of the United States." These amended rules were promulgated November 4, 1912, and take effect February 1, 1913. The following rules are quoted to show the reform that has been accomplished in the taking of testimony in equity cases:

46. TRIAL—TESTIMONY USUALLY TAKEN IN OPEN COURT—RULINGS ON OBJECTIONS TO EVIDENCE.

In all trials in equity the testimony of witnesses shall be taken orally in open court, except as otherwise provided by statute or these rules. The court shall pass upon the admissibility of all evidence offered as in actions at law. When evidence is offered and excluded, and the party against whom the ruling is made excepts thereto at the time, the court shall take and report so much thereof, or make such a statement respecting it, as will clearly show the character of the evidence, the form in which it was offered, the objection made, the ruling, and the exception. If the appellate court shall be of opinion that the evidence should have been admitted, it shall not reverse the decree unless it be clearly of opinion that material prejudice will result from an affirmance, in which event it shall direct such further steps as justice may require.

47. DEPOSITIONS—TO BE TAKEN IN EXCEPTIONAL INSTANCES.

The court, upon application of either party, when allowed by statute, or for good and exceptional cause for departing from the general rule, to be shown by affidavit, may permit the deposition of named witnesses, to be used before the court, or upon a reference to a master, to be taken before an examiner or other named officer, upon the notice and terms specified in the order. All depositions taken under a statute, or under any such order of the court, shall be taken and filed as follows, unless otherwise ordered by the court or judge for good cause shown: Those of the plaintiff within 60 days from the time the cause is at issue; those of the defendant within 30 days from the expiration of the time for the filing of plaintiff's depositions; and rebutting depositions by either party within 20 days after the time for taking original depositions expires.

48. TESTIMONY OF EXPERT WITNESSES IN PATENT AND TRADE-MARK CASES.

In a case involving the validity or scope of a patent or trade-mark, the district court may, upon petition, order that the testimony in chief of expert witnesses, whose testimony is directed to matters of opinion, be set forth in affidavits and filed as follows: Those of the plaintiff within 40 days after the case is at issue; those of the defendant within 20 days after the plaintiff's time has expired; and rebutting affidavits within 15 days after the expiration of the time for filing original affidavits. Should the opposite party desire the production of any affiant for cross-examination, the court or judge shall, on motion, direct that said cross-examination and any reexamination take place before the court upon the trial, and unless the affiant is produced and submits to cross-examination in compliance with such direction, his affidavit shall not be used as evidence in the cause.

49. EVIDENCE TAKEN BEFORE EXAMINERS, ETC.

All evidence offered before an examiner or like officer, together with any objections, shall be saved and returned into the court. Depositions, whether upon oral examination before an examiner or like officer or otherwise, shall be taken upon questions and answers reduced to writing, or in the form of narrative, and the witness shall be subject to cross and reexamination.

50. STENOGRAPHER—APPOINTMENT—FEES.

When deemed necessary by the court or officer taking testimony, a stenographer may be appointed who shall take down testimony in shorthand, and, if required, transcribe the same. His fee shall be fixed by the court and taxed ultimately as costs. The expense of taking a deposition, or the cost of a transcript, shall be advanced by the party calling the witness or ordering the transcript.

51. EVIDENCE TAKEN BEFORE EXAMINERS, ETC.

Objections to the evidence, before an examiner or like officer, shall be in short form, stating the grounds of objection relied upon, but no transcript filed by such officer shall include argument or debate. The testimony of each witness, after being reduced to writing, shall be read over to or by him, and shall be signed by him in the presence of the officer: *Provided*, That if the witness shall refuse to sign his deposition so taken, the officer shall sign the same, stating upon the record the reasons, if any, assigned by the witness for such refusal. Objection to any question or questions shall be noted by the officer upon the deposition, but he shall not have power to decide on the competency or materiality or relevancy of the questions. The court shall have power, and it shall be its duty, to deal with the costs of incompetent and immaterial or irrelevant depositions, or parts of them, as may be just.

The old equity rule, No. 67, which provided for the issuance of commissions to take testimony, has been changed so that instead of taking the testimony out of court the new rules provide that in all trials in equity the testimony of witnesses shall be taken orally, in open court, except as otherwise provided by the statutes or the rules, and except where good cause is shown for departing from the general rule. The examiner is required, by the new rules, to state objections to the evidence in a short form, and no transcript filed of such evidence will include argument or debate.

IMPROVEMENT OF CONDITIONS.

From the examination which the commission has made of the subject of interference proceedings, it is of the opinion that there would be no benefit to inventors or to the public in eliminating such proceedings from the Patent Office. On the contrary, such a change in the law would result in the issue of more patents that are invalid and would increase litigation. Under such a plan a patent would carry with it no presumption of validity, although it might purport to do so. The determination of the question of who is the first inventor must be made by the Patent Office, in the first instance at least, if the present examination system, which has been in existence

for 76 years, is to be continued. To return to a registration system would be a backward step.

The remedy lies not in a registration system but in the improvement of the examination system until it reaches a point as near perfection as possible. It is not unreasonable to expect that the Patent Office can be brought to a state of efficiency that will make its decisions on the question of priority so accurate as to justify a change in the law so that its decision will be conclusive on the parties, or, if an appeal to a court is then thought necessary, subject only to one direct appeal to the Court of Appeals of the District of Columbia on the record, or to a court of patent appeals when created.

The commission believes, therefore, that a thorough study of the interference procedure of the Patent Office should be made with a view to simplifying and improving it, so that the results obtained will be of more value and cases be settled more promptly. It is also of the opinion that the work on interference cases justifies the appointment of another examiner of interferences in order that more time can be given by such examiners themselves to the study of cases and reduce to a minimum the necessity for their relying upon the examination of evidence by assistants.

CHAPTER 5.

CLASSIFICATION DIVISION.

The Classification Division of the Patent Office is engaged upon a thorough revision of the classification of United States patents and upon other related work required by law and administrative order. All of its efforts are directed toward improving the facilities for the office force and the public in making the search as to "novelty, utility, and invention" (Rev. Stat., 4886). This work is of great importance, and should be performed under circumstances most favorable to such acceleration as is consistent with the utmost care. Thorough and well-considered results in the work being carried on by this division are essential to the successful operation of the examination system.

The patent laws of the United States require that every art, machine, manufacture, composition of matter, or improvement in any of them, shall be new, useful, and the result of an inventive act, before a patent of the United States may be granted for it (Rev. Stat., 4886). It is necessary, therefore, that some governmental agency be charged with the duty of examining every application for a patent grant and of determining whether or not each of these conditions precedent to the grant has been fulfilled. The Patent Office is the agency charged with this duty.

The terms of our patent law establish an examination system as opposed to the registration system which prevails in France and to some extent in England. The examination system presumes, (1) a full disclosure of the invention in the application, defining the precise article or process which the applicant considers he has invented; (2) a thorough investigation by the Patent Office into the novelty, utility, and originality of the thing for which the patent is claimed, and the granting or refusal of a patent, in whole or in part, in accordance with the result of the investigations; (3) the attaching of prima facie validity to the patent and the apprising of the public, by inspection of the clear and exact claims of the patent, of the extent of the monopoly which it has consented to grant.

Under a registration system, whether or not the Patent Office undertakes as in England an examination of the application, the office has no power of rejection, and a patent issues to the applicant as a matter of course upon his application containing a full written

description of the invention. The applicant takes the patent at his own hazard, no prima facie validity attaching to it, and the establishment of its validity being left to the courts.

The United States Patent Office is endeavoring to carry out fully all that is implied in the term "examination system." The search within that office is, according to the theory of the law and the interpretation of the office, so thorough as to entitle patents granted by the United States to prima facie validity in whatever business transaction or litigation they may be brought in question. It is apparent that the thorough examination within the Patent Office which is presumed as a prerequisite to the prima facie validity of the grant requires that the office adopt every means within its power to facilitate the work of its examiners and officials charged with the determination of the novelty, utility, and originality of ideas embodied in applications. The more accurate and comprehensive the search within the office the more nearly will be attained the ideals apparently established in the patent law. Inaccuracy of search within the office however caused must result in the prima facie validity of a patent being considered by the public and by the courts in effect a mere theory; and as prima facie validity is the fundamental distinguishing feature between the examination and the registration systems of patent law, it follows that to the degree that search within the office is lacking in accuracy and comprehensiveness, our patent system must, despite the theory of the law, become a mere system of registration.

Well-devised facilities for search adopted by the office for its own use, when furnished the public, acquaint the public to the extent, of course, to which they are accurately used, with the state of the industrial arts at the time of search and gives that insurance against there being "lost arts," which is the fundamental justification of the grant of monopoly contained in a patent. Ready means of securing this knowledge is essential in order to keep the number of applications for patents within limits practical for handling under an examination system, and also to the proper drawing up of specifications and claims by applicants.

The three fundamental conditions precedent to a patent grant (novelty, utility, invention), are susceptible of independent determination. Utility and invention may ordinarily be determined prima facie; that is, judged of from the knowledge imparted by the full disclosure required by law in the application, while determination of novelty requires a comparison of the claimed means with all that has been previously made known of like character. Determination of the newness of an alleged invention requires that the searcher first form a mental image of the means claimed so that he will be able to recognize it when illustrated in widely different material

forms, and then make an exhaustive investigation into all achievements of a like character in the industrial arts, prior to the filing of the application under consideration, which have been available to the public without distinction of persons. The vast expanse of the industrial arts to-day, the refinements and niceties to which they have attained, and the illimitable combinations and permutations of substances, conditions, acts, mechanical elements, processes and instruments susceptible of being assembled, render the thorough investigation into the novelty of an alleged invention which the gravity of a public grant of a monopoly deserves, no simple task under the most favorable conditions.

NECESSITY FOR CLASSIFICATION.

Without a classification of the subjects of invention appropriate to and coordinated with the principles of patentability sufficiently refined to divide the entire field into relatively small ultimate units sufficiently uniform in principle to guide the searcher to the proper unit, and with such a basis of division as will bring those means which have the largest number of elements in common together under the units, it would be impossible to determine the novelty of each of the multitude of claims in the 70,000 applications now being filed annually with a reasonable approximation to certainty within the brief space of time possible to be allotted to each application in order that such speedy action may be had as the public interests and those of the inventor demand. It is evident that with over 1,040,000 patents of the United States Patent Office at the present time constituting the field of search among United States patents within which examiners must look in determining the novelty of an idea it is inconceivable that such a search could be made without a classification which will enable the examiner to limit himself to a small number of these million-odd prior patents.

THE FIRST CLASSIFICATION.

The first statute of the United States authorizing the grant of patents (Apr. 10, 1790) established the examination system. However, the field of search represented by then existing patents was small, and the patent board under the law of 1790 had little need of a classification. When the law of 1790 was repealed (Feb. 21, 1793) and a registration system established the total number of United States patents was 57. On December 10, 1830, the Secretary of State submitted to the House of Representatives a list of the patents then granted, 6,170 in number, classified in 16 classes. This was the first official classification of the United States Patent Office. It was devised while the registration system was still in effect and was

doubtless suitable for the needs of the law then in force. Few of the classes were composed of inventions having that homogeneity that would be most useful in a search for anticipation. The patents included in them were placed in some of the classes in accordance with the associations of use intended by the inventor in a certain trade, art, or profession, or in a certain group of trades, arts, or professions, rather than in accordance with associations of their primary functions or the effects produced by the means disclosed in them. Such were the classes of agriculture, factory machinery, and common trades. Other classes, such as hydraulics, and calorific and steam apparatus, depended upon the particular substances dealt with or the particular forces applied both for general or special purposes.

THE CLASSIFICATION UNDER THE ACT OF 1836.

By act of July 4, 1836, the ' examination system" was reestablished, and following that a classification was formed increasing the number of classes from 16 to 22. There were then 9,802 patents to be classified. Although this classification had to provide for search, and should, therefore, have been carefully devised in accordance with the principles governing the allowance of patents, it was not materially different in its plan from the classification of 1830.

THE CLASSIFICATION OF 1868.

The classification of 1836 remained substantially unchanged officially until 1868, though it may be that the several examiners subdivided the material under these classes from time to time. By 1868 the field of search included a little over 80,000 United States patents. The classification of 1868 contained 36 classes. ' The purpose of the change," said Commissioner Theaker in his report of January 14, 1869, "so far as it affects subjects, has been to secure more homogeneity in the classes and to allot more systematically the floating cases, whose distribution has previously been rather arbitrary than consistent." This classification does not appear to have had any uniform basis, but was still divided generally according to the association of inventions with a particular industry or group of industries or the application of a particular force both to the general and special uses. It seems to have been mainly a further refinement of the classification of 1836.

THE CLASSIFICATION OF 1872.

The act of July 8, 1870, established the law under which, in the main, the Patent Office is now operating. On March 1, 1872, a revised classification was adopted. This comprised 145 classes and is the basis of the classification which existed when the Classification

Division of the Patent Office was established in 1898. This classification, like that of 1868, consisted only of main classes without subclasses, except that some classes of extensive development were divided into two, three, or more sections. Cross notations were appended to some class titles, and under each class were numerous common titles of things included under it, bearing no particular relation excepting an alphabetical one. At the time of the publication of the classification of 1872 about 131,000 United States patents had been granted.

LATER CLASSIFICATIONS.

Between 1872 and 1898 the rapid increase of activity in the industrial arts necessitated the Patent Office devoting considerable attention to the subject of classification. Revisions were promulgated in 1878, 1880, 1882, 1883, 1885, 1887, 1889, 1891, 1893, 1895, and 1897. The order of September 19, 1877, approving and adopting the report of the committee of classification of that year forbade for the first time changes by examiners in the classification except with the approval of the commissioner. At that time the division of the classes into subclasses was made by the several examiners in charge of the particular classes, and the subdivisions were in accordance with the several notions of these examiners, though the classification of 1880 contained both classes and subclasses. By July 1, 1897, the number of classes had increased to 226, distributed among 34 examining divisions.

From 1872 to 1898 the examiners, in fact, made the classification to suit themselves, and from year to year, as the overcrowding of one division made it desirable to equalize the work, parts of classes were transferred to other divisions for this purpose. Thus the Patent Office classifications prior to 1898 developed upon nonuniform and ill-defined principles. The approval of the commissioner required by the order of September 19, 1877, for changes in classification could have no marked unifying effect, as it was obviously impossible for the commissioner to give the great amount of attention to the matter requisite to the accomplishment of desirable results, there being no division of the office charged with this duty. The difficulties besetting the numerous examiners and assistants in attempting to classify their particular arts while pressed with the current work of examination; the possibility of each examiner adopting a different basis of classification; the tendency of each examiner to draw "sharp lines" in his class and subclass titles in order to exclude from his classes all doubtful or marginal cases, thus leaving them without a resting place; and the improbability of examiners in charge of definite arts which tend to monopolize their interest being able to view comprehensively the entire field of industrial art and perceive

the relationship thereto of his particular portion of it, prompted the establishment of a Classification Division charged with the duty of revising the classification and unifying the principles of assignment of industrial means in the classification.

In other chapters of this report is emphasized the need for such changes in methods and organization and such exercise of authority as will put into operation a force sufficient to overcome the marked tendency toward the development of as many "little Patent Offices" as there are examining divisions, each with its own notions as to what constitutes novelty, utility, and invention. The establishment of the Classification Division in 1898 was a notable step in this direction.

CREATION OF CLASSIFICATION DIVISION.

The Classification Division was established pursuant to act of Congress of June 10, 1898 (30 Stat., 440). This act reads as follows:

> That for the purpose of determining with more readiness and accuracy the novelty of inventions for which applications for letters patent are or may be filed in the United States Patent Office, and to prevent the issuance of letters patent of the United States for inventions which are not new, the Commissioner of Patents is especially authorized and directed to revise and perfect the classification by subject matter of all letters patent and printed publications in the United States Patent Office which constitute the field of search in the examination as to the novelty of invention for which applications for patents are or may be filed.

It is to be noted that the function of this division as broadly outlined by Congress is not confined to the classification of United States patents. The duties directly imposed by the statute quoted appear to be as follows:

1. Classification of United States patents.
2. Classification of the patents of all foreign countries which print their specifications and drawings and have furnished them to the United States Patent Office.
3. Classification of the literature comprised in books and pamphlets.
4. Classification of the literature comprised in periodicals.
5. Classification of trade catalogues.

The work of the Classification Division will be discussed under the foregoing headings.

1. CLASSIFICATION OF UNITED STATES PATENTS.

It is said that probably no one in the Patent Office at the time of the establishment of the Classification Division comprehended the magnitude of the task undertaken, of not only classifying under unerring principles the existing productions of the human mind relating to applied science and industrial art, but also providing a

classification for receiving the illimitable number of arts and instruments now unknown, but to be created in ever-increasing ratio. The very statement of such an undertaking presents, of course, proof of the impossibility of working out a classification which will be logically correct for all time and proof of the necessity of always having within the Patent Office under the examination system a division charged with the function of making such revisions from time to time in the classification as will keep it abreast of advances in the arts and always the best possible guide to search.

Doubtless many at the establishment of the Classification Division conceived that its task was merely to doctor up apparent weaknesses in the classification then existing, to sort out and stamp United States patents in accordance with such minor changes, and to correct such mislocation of patents as had occurred. Instead of this the task that the Patent Office has undertaken is that of securing in one division of the office a view of the whole field of invention and working out in the light of such knowledge a classification best adapted to guide the searcher, whether within or outside the office organization, to the most accurate determination possible as to the novelty of an idea.

It is recognized by the office that frequent changes in the classification destroy the possibility of such familiarity with its plan and contents as is essential to fully securing the result sought by classification, namely, the narrowing of the field of search. It is believed, however, that the time has arrived when the great number of patents requires that a classification shall be devised which shall approach as nearly as possible to the ideal, regardless of what has been done in the past. The danger of an examiner failing to find valid references against an application, or failing to take into account applications for similar ideas in other divisions of the office at the same time, has proved the necessity of taking an inventory, as it were, of the inventions disclosed in the million patents heretofore granted and of grouping those disclosures for purposes of search in the way that the principles of patent law (of what constitutes novelty and what constitutes invention) prove to be most practicable. It is the intention, once this reclassification is completed, to retain it for the future as nearly stable as may be, making such adjustments only as future invention shall prove necessary in order to retain the advantages of the system upon which the classification is based.

PURPOSE AND PLAN OF CLASSIFICATION.

For a statement in considerable detail as to the purpose and plan of the classification upon which the Patent Office is now working attention is directed to Appendix K. which contains a statement prepared by the Patent Office. It shows what, in the opinion of the

office, are the apparent defects of the previous classification, and what the office is doing and planning to do to remedy these defects.

The commission in this report makes no argument as to the merits of the system of classification upon which the Classification Division is now working. It assumes that the office after an experience of 76 years under an examination system is well qualified to determine what system of classification is best adapted to facilitating search toward the end of establishing a real prima facie validity for its patents.

It should be stated that such criticisms of the system of revision of classification as have come to the commission appear to be largely the result of the present incompleteness of the revision and in many cases to a failure to comprehend its plan. It is believed that with the initial covering of the whole field of United States patents by the Classification Division, the rounding out of the logical system, and the completion of such an index as will serve as a ready guide to the classification these criticisms will gradually disappear. No logical system of classification in any field can be serviceable, moreover, to the extent of its possibilities until those who are using it acquaint themselves fully with its plan and avail themselves of all the aids which the classification presents.

It has been stated that from 1830 to 1898 the classifications of the Patent Office were for the most part the work of the examiners themselves, especially in the subclasses, and that they present no uniform logical system which would serve, if followed with care, to guide the searcher over a comprehensive survey of disclosures which might serve as references to disprove the novelty of an idea in question. In so far as any principle of classification was dominant it may be said to have been that of classifying in accordance with associations of use intended by the inventor in a certain trade, art, or profession, or in a certain group of trades, arts, or professions. Examples are "butchering," "bookbinding," "games and toys," "kitchen and table articles," "trees, plants, and flowers."

In the case of St. Germain *v.* Brunswick (135 U. S., 227) patent No. 72969, for a billiard-cue rack, was declared invalid in view of devices such as that shown in patent No. 6665, for a rotary table; No. 35799, for a caster holder; No. 47664, for a plant stand; and No. 76211, for a table waiter. In this case the defendant objected to the pertinency of the rotary supports, in view of which it was contended the rotary billiard-cue rack was not patentable, because they were in different arts. The court held that the function of the bottle caster, for example, with respect to bottles was the same as the function of the cue rack as to cues, and that in considering the analogies of art it must be the primary and necessary function served by the several apparatuses rather than their use as accessories

to an amusement hall or to a dining table or to a conservatory. The billiard-cue rack was classified in class 46, games and toys; the table in class 45, furniture, tables; the caster holder in class 65, kitchen and table articles; and the plant stand in class 47, trees, plants, and flowers.

The Patent Office in its revised classification considers that the necessary function of these several devices is a better bond of classification, so far as facilities of search are concerned, than their applied uses in relation to sport, tableware, horticulture, and the like, the applied uses being matters of accident rather than essence. The present plan of classification will assemble rotary racks in one class, provided their function is limited to that of supporting things on a rotary support for the mere convenience of exhibition and access.

The fundamental principle running through the revision of classification now in progress is the grouping of subjects of invention upon fundamental resemblances.

The illustration given above will be found in Appendix K, with others of similar pertinence, to show the purpose and plan of this change. Thus, it is stated:

> It is beautifully easy to place patent No. 484955, for a liquid cooler, in the class of refrigeration, because the specification tells at length how the patented instrument is adapted to reduce the temperature of fluids, and mentions no other utility; and equally easy to place patent No. 243686, for evaporating apparatus, in the class which deals with evaporation, because the specification clearly states that the operation of the apparatus causes evaporation. But it is not so easy to find these two patents at a subsequent period when another inventor seeks a patent for the invention claimed in patent No. 874343, for a pasteurizer, after this easy process of classifying has been carried out.[1] The proximate function or necessary effect or product (particularly the first) is not always easy to get back to, but each is in the nature of a peculiar property whose selection as a classification bond affords more accurate results and is more certain to be fixed upon by different minds as the common property appertaining to a large number of means than is any ulterior utility or accident of application, of which there may be many, any one of which may be hit upon in the effort to classify.

In the statement of the Patent Office referred to it is urged that—

> The principle of coordination and subordination applied to the subclasses of a class should be applied to coordinating and subordinating the classes with respect to each other. A correct arrangement of classes with respect to each other and the broader natural divisions of the useful arts would afford the same assistance in studying and reaching conclusions, which it is the object of a classification to aid, as does such an arrangement of subclasses in a class. The ordering of classes into a definite scheme of mutual coordination and subordination would need, for most efficient use, a corresponding classification of the office personnel. The personnel could be grouped in accordance with the character of its duties, which should be the examination of certain kinds of inventions.

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[1] These three patents mentioned are very closely related as to their fundamental principle, and should be considered together in making a search.

It is believed that such a regrouping of the examining corps of the Patent Office into divisions which shall perform functions of examination in fields of invention much more nearly related than is now the case may be necessary to the establishment both of proper and necessary supervision within each examining division, and of such an organization for the entire office as will make effective the central direction and control so necessary for a uniform administration of the patent laws. This plan of regrouping must necessarily wait, however, upon the initial completion of the entire plan of classification of United States patents.

PROGRESS IN CLASSIFICATION.

The Classification Division has been engaged since 1898 (order No. 1250, of Nov. 17, 1898) upon the revision of the classification of United States patents, and it is estimated that the task is now (September, 1912) 43 per cent completed. (See Appendix K.) On January 1, 1902, the first classification since the establishment of the division was published, containing such revision as had been made to that date. This classification contained 235 classes. In the next classification, of January 1, 1905, there were still 235 classes, 45 of which had been revised by the Classification Division and many of the patents formerly contained therein removed and consolidated with more analogous material in other classes. On July 1, 1908, the classification contained 241 classes, the 6 additional ones having been found necessary to be established by the Classification Division to receive material gathered up in the revision occurring between 1905 and 1908. In this period 14 additional classes were received, defined, and published. The next classification, published January 1, 1912, is that now in force. The number of classes had increased to 243, and the number of classes which had been revised, defined, and published to 107.

The amount of work accomplished to date in the revision of classification of patents and estimates for the accomplishment of the balance of the task should be considered in the light of the difficulties of the task and of the numerous related and unrelated duties imposed upon the division and the individuals of its force. It should be emphasized here that an estimate regarding classification can not be made with the accuracy of an estimate regarding the length of time it would take to typewrite a certain record, the number of words in the record being known and also the speed of the operator. Frequently, in making up a new class a majority of all the patents issued have to be handled. It is becoming increasingly desirable as the number of patents increases to provide more general classes, which have to be made up from patents distributed through numerous

classes. This is a classification task of greater difficulty than the mere subdivision and clearing up of an existing class. At the present time, however, it is found there is no such easy task provided as merely subdividing an existing class. Practically all old classes, formed more or less on the lines of an industry or fragment of an industry, or the treatment of a particular material, and, including those placed there on the theory of analogy, many things not within the title, have so many ramifications and interlacings that the patents therein have to be divided on different resemblances than were before adopted, and the class becomes a new one. To-day many subclasses in the Patent Office classification (that of Jan. 1, 1912) comprise more than 1,000 patents and several more than 2,000, while some classes comprise more than 17,000 patents, and class 21 over 35,000.

The functions of the Classification Division, related and unrelated to that of revising the classification of United States patents, will be spoken of hereafter, as well as certain conditions working against the accomplishment of steady, thorough, and uniform results by the assistant examiners engaged upon classification and by the division as a whole.

FORCE EMPLOYED.

In the 13 years of the existence of the Classification Division the number of assistant examiners engaged per year has varied from an average of 4½ in 1899 to 25 in 1911. These figures include the examiners in charge of the Classification Division. At the present time 25 are authorized but only 23 are actually engaged upon the work, the force being depleted by resignations. It is estimated that at the present rate of progress, with no diminution or redistribution of functions and with the continuance of all the present conditions which work against the accomplishment of the task, it would take a force of 25 (the present force) 16 years, or through 1927, to finish the revision of classification. Estimating on the same basis, a force of 50 would be able to finish in 7 years, or by September, 1919. These estimates take into consideration the current increase in the total number of United States patents issued by the office, which by September, 1927, it is figured, would reach 1,565,000 (as against 1,040,000 in September, 1912) or 1,285,000 by September, 1919. (See Appendix K.)

It is certain that if provision be made by statute and administrative order for readjusting the performance of the functions of the Classification Division and relieving the force engaged upon classification of duties which they should not have, additional results will be accomplished by each examiner at work in the division (over the present rate of accomplishment) to the extent of adding at least 33⅓ per cent to the efficiency of the division. Thus a force of 50

examiners should, if working under the most favorable circumstances, finish the revision by July of 1917.

Extending the general plan of classification into the coordination and subordination of classes, and the production of a tabular arrangement, merits the undivided attention of the examiner of classification The working out of the scheme necessitates most careful consideration and also careful testing. It would be a process of induction, and therefore could not be theoretically schemed out and published as a guidance. A large majority of the instances should receive attention in order that proper conclusions may be reached. No classification can be of practical value until the subject matter to be classified is fairly well understood. Each group would have to be carefully divided "exhaustively," so that the sum of all divisions would be equal to the total material which the basic characteristics of the group required it to include. This would necessitate a careful consideration of all material of the useful arts and an examination into all existing classes and subclasses (approximately 17,000 of the latter).

Such a scheme could only be tentative until it had been tried out. It is, of course, difficult to classify with the public copies, which have to be stamped definitely and the class schedules printed immediately. The test is then made by the public and by the office, and subsequent changes necessitate a great deal of clerical work which might be avoided to some extent if the Classification Division were working with a third set of copies so as not to disturb those in use by the examiners and the searchers in the public search room. Working over a classification with the copies used by the public and keeping them available for search at all times is, it will readily be seen, somewhat of a handicap.

Having settled upon a tentative outline, individual classifiers would have to be assigned to certain groups. It is thought that having properly subdivided the material in larger groups, and outlined tentatively the various characteristics upon which the divisions should be based, one man could be placed in charge of a group and others set to work on the subdivisions of that group—to examine the material and try the outline to see if it be a proper one upon which the entire group of subject matter may be classified. Some of the groups would be too large perhaps to be placed in charge of one man. One man might be placed in charge of a particular group, say conversion of energy, or of a subdivision of such a group, say motors. The individual classifiers would be obliged to work in harmony, with frequent interchange of ideas and of information regarding the material they were handling, in order to avoid overlapping of the divisions or failure of divisions to join.

Having a relatively large force at work upon a general subject, the personal element necessarily has its influence, and differences of opinion would arise regarding the placing of particular patents or the drawing of lines. It would be necessary to have the person in charge of the group to act as adviser and governor, and it would also be necessary, if a reasonable uniformity is to run throughout the system, to have the chief classifier in continual personal contact with all of the groups and all of the individuals.

Before setting forth the conditions which now hamper the work and suggesting what should be done to eliminate them, emphasis should be laid upon the need of completing the initial revision as soon as possible.

DIFFICULTIES OF THE WORK.

In the first place the work of classification, besides interfering with the established order of things, takes the examiner's copies from the examining divisions when the class is ready to be stamped and retains them in the Classification Division for about two weeks. This obviously results in retarding the work of the division to some extent. The copies are, however, always kept in condition to be accessible to the examiner and to the public during that period.

More important than this, however, is the difficulty in having one portion of the classification based upon a definite rule while the balance of the classification has no special plan running through it, with the result that persons make no attempt to ascertain the principles upon which the definite rule of the revised classification is based, and consequently go as much at random through the revised classes as they do through those which have not been revised. Entire breaking away from the old system of classification and education of the examining corps of the office and of the public in the principles of the revised classification should come at the earliest date possible.

The completion of the initial revision, the rounding out of the classes, subclasses, and definitions by a complete resurvey of the entire work and the devising of such an index as will be a most practical aid in the use of the new classification are essential before this education of the examining corps and of the public in the use of the new classification is possible. The examining corps and the public have become accustomed to finding patents relating to certain subjects in certain classes, and they have learned where those patents are placed even when the title does not indicate that any class or subclass offers any such subject matter. They have acquired a sort of special knowledge which is valuable to them. When that old arrangement of patents is disturbed, even though the formerly obscurely placed subject matter is now placed under an appropriate title and logically in relation to any other subject matter, it upsets

an ordering which has existed for years and consequently causes them considerable annoyance and inconvenience and delay in search.

The maintenance of a system unchanged is a very definite advantage, and of course it is advisable to fix the classification, as much as any classification can be fixed, in as short a time as possible; though it is not to be expected in the nature of things that a classification which relates not only to things existing but to things which are to exist in the future can remain absolutely fixed. Finally, it is plain that the advantages sought from a revision of the classification should be obtainable in search in every field of invention at the earliest practicable time.

The conditions before mentioned which hamper the expeditious, thorough, and uniform accomplishment of a revision are as follows:

In the first place the Classification Division is not permitted to be free from the current work of the office.

The chief of the division is so much occupied with duties imposed upon him not relating strictly to the work of planning and supervising the revising of classification that he has very little time left to devote to this most important function. One of the duties imposed upon the examiner of classification is the holding of hearings to settle classification disputes between primary examiners. This work occupies usually half of the week or more. What is involved in this work of hearing classification disputes will be set forth hereafter. It will be sufficient to say at this point that while it is very important and should doubtless be retained as a function of the Classification Division it should be subordinated decidedly to the major work of revision of the classification. The examiner of classification should be relieved of this task, and the hearing should be delegated to a subordinate.

Again, the Classification Division being in the midst of the current work of the office is made use of by assistant examiners; that is, the assistant who examines a class which has been revised by the Classification Division is in frequent consultation with the classifier who did the work. The public likewise call upon both the examiner of classification and his assistants to a large extent to secure aid in search in the classes which are in the Classification Division under process of revision. Under present conditions this is absolutely necessary.

As the classified copies of patents relating to any particular class which is under revision are removed from the public search room and stored in the Classification Division, the work of revision necessarily breaks up the old classification and the new subclasses are identified by pencil titles or arbitrary marks which are not always easy for strangers to find or understand. As the public have to search from

this set of copies which are in the Classification Division, it is practically impossible for them to search classes under revision without the assistance of the classifier who is at work upon the class. This necessarily consumes the time of the classifier. A complete set of copies of patents suitable for search and handling should be put in the possession of the Classification Division in order that the work of classification may go on without interfering with the copies of the public search room or the copies of the primary examiners. Thus the existing classification in the search room would remain undisturbed until a class was completely revised. There would be no necessity then for the public to come into the Classification Division and take up the relatively great amount of time that they do under existing methods. This point is important, both from the point of view of the Patent Office in the prosecution of the revision of its classification and of the public.

Much emphasis has been laid in statements received from experienced public searchers upon the great inconvenience arising to the public from finding the sets of patents in the public search room incomplete, thereby being under the necessity of inquiring in the Classification Division. On the other hand, from the point of view of the Patent Office, the assistants in the Classification Division report that they are compelled to give much time and attention to aiding public searchers in locating tentatively revised old classes among files distributed necessarily in all parts of the Classification Division. It is found that public searchers do not always follow rules suspended in plain sight for their perusal and sometimes leave the division without restoring the patents in their proper case and place. Frequently cross-reference slips attached to patents are either missing or, worse still, attached to the wrong patent.

Again, during periods when an effort is being made by the Patent Office to bring its current work up to date, assistant examiners in the Classification Division are called from the work of revising the classification to the task of aiding the examining divisions to examine their applications. This should be prohibited by administrative order. The Classification Division was established pursuant to an act of Congress to accomplish a definite task of great importance, and the accomplishment of this task expeditiously, thoroughly, and uniformly should not be interfered with for any matters of temporary expediency.

Again, one of the duties of the Classification Division has been to perform special work necessitated by requests for information made upon the Commissioner of Patents by Congress, the Secretary of the Interior, or by other departments. This duty should be performed elsewhere.

Again, one of the assistant examiners devotes many weeks each year to duties connected with civil service examinations and two other assistant examiners have also devoted considerable time to work of this character.

In cases where an officer of a Government bureau has made an invention and desires it to be patented and dedicated under act of March 3, 1883, chapter 143, an assistant in the Classification Division is likely to be designated to prepare the application.

All of the above-mentioned difficulties may be summarized by the expression at the beginning of their enumeration, namely, that the Classification Division is in the current work of the Patent Office, whereas, with the exception of certain functions hereafter to be mentioned, it should be left free and unhampered to accomplish the definite task for which the division was established.

Another condition which works against the accomplishment of steady progress by the Classification Division is the reluctance with which some assistant examiners accept a detail to that division. Many of the assistants now engaged upon the revision of classification express themselves as well satisfied with the work and none have expressed repugnance for it. It is, however, a fact that many examiners engaged in examining divisions have resigned from the office rather than go to the Classification Division, and it is also true that many others who have started upon their work in the Classification Division and reached various stages of completion have resigned, leaving their work incomplete and necessitating some other assistant going over the entire field. There are various reasons for objections to the work of classification on the part of assistant examiners.

First. The work is much more arduous and confining and the problems to be solved are far more intricate and puzzling than in the case of examining work.

Second. An assistant examiner soon loses his knowledge of the growth and progress of the patent law as exemplified by the decisions of the tribunals of the office printed in the weekly edition of the Official Gazette, and on returning to an examining division after several years' service in classification he finds himself greatly hampered in that he must at once familiarize himself with all of the decisions which have been published during the several years that he has been out of the Examining Division. All of this affects his efficiency as an attorney if he elects to resign and practice patent law or his efficiency in an examining division if he elects to remain in the office.

Third. Those who expect some day to leave the office and practice patent law object because they think they are not so closely in touch with attorneys practicing before the office as they are in an examining division.

It is believed that there is at the present time less objection to service in the Classification Division than has existed at times in the past. It is thought that it would be not only desirable but just to offer some inducement to attract men toward this detail, such as a small increase of compensation during service in the Classification Division, or an advancement in rank beyond that which would come to an examiner as the result of a similar period of service in an examining division. At any rate, in a system of promotion based upon efficiency ratings and examinations, as recommended in another part of this report, due credit can be given for this or any other duty that calls for exceptional qualifications. Increase in compensation or advancement in rank should, however, take effect only after a fixed period of service in the Classification Division has given satisfactory proof of the assistant's ability as a classifier. The experience of the examiner of classification has been that some assistant examiners who have shown most marked ability in examining divisions prove failures in the Classification Division.

The men at present engaged in the Classification Division are men of extensive education and, for the most part, of considerable experience both outside and within the Patent Office. Of the 23 (including the examiner of classification) all have college degrees, 19 have had special technical training in engineering or chemistry, 13 have had experience outside of the Patent Office in technical fields, and 14 have law degrees. The examiner of classification was, at the time of his transfer to the Classification Division, the chief of an examining division, 2 of his assistants are first assistant examiners, 11 are second assistant examiners, and 9 are third assistant examiners. There are at the present time no fourth assistant examiners engaged upon classification. The importance of the task before the division warrants every effort being made not only by the examiner of classification, but by the commissioner and the chiefs of the examining divisions, in securing for its prosecution men from the examining staff who have given evidence of pronounced ability in recognizing, comparing, and distinguishing the refinements and niceties in the industrial arts and in comprehending the principles which should govern the grant of monopolies by reason of the novelty, utility, and presence of invention in ideas.

There is no way for the Patent Office to procure from the outside ready-made skilled patent classifiers; it is necessary, therefore, either to procure persons skilled in the science of classification and teach them patent law and practice or else take persons already experienced in the patent law and office procedure and do the best possible to teach them classification. Without doubt the latter course will secure far more practical results than the former.

The Classification Division, like most of the units of the Patent Office, is working in a physical environment very discouraging to efficient work. Its quarters are extremely crowded, lacking in light and ventilation and considerably in need of the operation of a vacuum cleaner. Hardly an inch of its walls but is crowded with patents in classes in process of revision. The furniture is old and of every type. There is no possibility of such privacy as is essential to the solution of the intricate problems presented. Recommendations for increase in force for the prosecution by the Classification Division of its important task can not be considered apart from the problem of securing for it far more ample and suitable quarters.

2. CLASSIFICATION OF THE PATENTS OF FOREIGN COUNTRIES.

This work the Classification Division, in classifying the patents of all foreign countries which print their specifications and drawings and have furnished them to the United States Patent Office, has not yet entered upon. That it is very important is emphasized by statements received by the commission from experienced public searchers and practitioners. Great Britain sends three copies of each patent. Germany, France, Austria, and Switzerland send three each; Sweden, Norway, and Denmark, two each; Russia, Japan, and Hungary, one each. Other countries do not publish patents, but send lists of applications and grants and indexes thereto. There should be in the Patent Office three copies of every foreign patent. To secure patents of past issue from foreign countries so as to provide three sets of each may be in some cases a difficult task, but it should be undertaken and prosecuted vigorously. There are about 250,000 German patents, of which the first 60,000 (even 1 copy) are not in the United States Patent Office. Of the 450,000 French patents about 6,000 are missing from the United States office.

The foreign patents retained in the library of the Patent Office for public search should be classified, and it is the plan of the office so to do, in accordance with the published foreign classification of the country from which the patents are received. The bound volumes of German patents have grown to such a number (2,400 volumes of drawings and 1,000 volumes of specifications) that it is a task involving much physical labor and waste of time on the part of the searcher and library assistants to make a search among them. The classification of British patents is contained in the volumes of British Abridgments, the possession of which by our office now renders the arrangement of the British patents to correspond therewith a matter of much less importance than in the case of the German patents. Much has been done recently in the library in arranging the French patents for easy search in accordance with the French classification.

The examiners' set of foreign patents should be classified in accordance with the United States classification, so far as that can be done. It can only be done completely by photolithographing and mounting cross references, but it can be done probably sufficiently adequately on the broader subdivisions of United States classification. The examiners' set of foreign patents will in a sense automatically classify itself as the scheme of classification of the United States patents is completed. That is to say, there will be no labor required in forming an outline of classes and subclasses, that having already been done in classifying the United States patents. The labor required, therefore, in classifying the foreign patents in accordance with the domestic patents will be the determination of what the invention set forth in the foreign patent is and then placing it in the appropriate class and subclass.

Both of the tasks as to foreign patents are properly the work of the Classification Division, and in fact, in order to secure best results in them, they must be performed by this division acting for the entire Patent Office. At present all foreign patents are received in the library and distribution is made from there to the various examining divisions of patents most closely related in subject matter to the classes of United States patents there examined in each. It is thought that the task of classifying the foreign patents in the examining divisions should be left until the revision of classification of United States patents shall be perfected, as to start the work now would necessitate so many changes in the future (with changes in the United States classification) as to involve a task unjustified by the immediate necessities of examination. The task of arranging the foreign patents in the library in accordance with the several foreign classifications should be undertaken at once by at least two skilled and careful workers working under the supervision of the examiner of classification. This latter work is probably the most pressing need of the scientific library at the present time.

3. CLASSIFICATION OF THE LITERATURE COMPRISED IN BOOKS AND PAMPHLETS.

Books and pamphlets, it is believed, should be classified in accordance with an approved library classification. Preferably the classification of the Library of Congress should be applied, as this would make the scientific library and the Library of Congress available under a uniform classification. Furthermore, as other libraries throughout the country are classified on the basis of the Library of Congress, it would make those libraries available under the same classification. This book classification should, however, be supplemented by an abstract or good title index classified in accordance with the classification of the United States patents where this should

be found practical. This would be desirable with respect to books of miscellaneous contents and to descriptions and drawings found in unexpected and out-of-the-way places.

The classification of books and pamphlets in accordance with the Library of Congress classification should be commenced at once by the force engaged in the scientific library. The relation between the scientific library and the Classification Division as to this work will be discussed in speaking of the needs of the scientific library. The classification of subject matter included in the abstract or title index above mentioned should be undertaken by the Classification Division after the revision of the classification of United States patents shall be completed. It seems important, however, that assistants in the Classification Division, in prosecuting their work of classifying patents, should make permanent records, arranged in accordance with the classes and subclasses arrived at in their work, of books, pamphlets, periodicals, trade catalogues, and parts of these consulted in their work. These permanent records should be of great importance in making the abstract mentioned.

4. CLASSIFICATION OF LITERATURE COMPRISED IN PERIODICALS.

The periodical literature should doubtless also be classified under a library classification such, for example, as is adopted in the German Repertorium,[1] and contents of the periodicals, where found to be useful, should probably also be indexed by an abstract or descriptive title index, classified in accordance with the classification of United States patents, as indicated in connection with books and pamphlets. It is obvious that such a technical index of the subject matter contained in periodical literature should be compiled only by those highly skilled in the various arts rather than by library assistants not technically educated.

In chapter 6, concerning the needs of the scientific library, it is recommended that the further prosecution of work by the assistants in this library upon a card index to periodical literature should be discontinued. It is desirable to repeat this recommendation here, as in the case of the making of the abstract or title index of books and pamphlets above mentioned the work of indexing and abstracting the literature contained in periodicals should be taken up by the Classification Division after the revision of the classification of United States patents shall be completed. Although this is a work of great importance, it is believed that until the Classification Division shall be ready, by reason of the completion of its classification of patents, for its undertaking, examiners and public searchers will be sufficiently guided as to the titles of articles by reference to the Fortschritte Der Teknik.

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[1] Now Fortschritte Der Teknik.

The apparent necessity of postponing till after the completion of the revision of classification of United States patents the very important work of abstracting the material in books, pamphlets, and periodicals is an additional urgent reason for granting to the Classification Division such additional force and improved facilities as will enable it to make rapid progress toward the completion of the revision.

At this point should be pointed out the importance of the "card index to chemical literature," now being compiled by the Classification Division, as to which a detailed statement in Appendix K herewith sets forth both plan and purpose.

In the case of chemical literature, the work of classification was commenced more than 12 years ago, because of the great difficulty then experienced in searching chemical literature as to the question of novelty and also because chemical literature must be searched far more frequently in the examination of applications for chemical patents than in the case of the mechanic arts. The reason for this is that while in the aggregate the number of chemical patents actually granted in a year by this and foreign countries is quite large, the percentage of chemical substances described in literature, which are made the subject of product, process, or apparatus patents, is exceedingly small, because most chemists work in the field of pure rather than applied science, and are on principle opposed to monopolizing their discoveries through the medium of patents. They freely publish their discoveries to the world, but as a rule do not patent their chemical discoveries. As a result, the search as to novelty will frequently fail if confined to patents alone, because the chemical discovery was never patented but described in chemical literature only. It is obvious that no one should be permitted to procure a monopoly grant for any product, process, or apparatus which had been previously dedicated freely to the world by publication in books or periodicals or otherwise. The prevention of such unmerited grants of monopoly should be provided for by the Patent Office by every practical means. At the present time three persons are giving their entire time to this work.

It is recommended that such additional force be added to the Classification Division as shall be sufficient to bring the back work up to date, and to care for the current work in the future. This additional force should include one skilled chemist for general supervision of the work.

5. CLASSIFICATION OF TRADE CATALOGUES.

Trade catalogues should be indexed strictly in accordance with the industries in a manner similar to that of trade journals. They probably should be classified under the same classification. It

would be impractical to classify them under the patent classifications, although their contents might be abstracted and so classified where found desirable. As a general thing, however, trade catalogues illustrate things which have been previously illustrated in patents.

THE CLASSIFICATION DIVISION AS A PERMANENT PART OF THE PATENT OFFICE.

In order to retain the advantage resulting from a thorough revision of the classification of United States patents along lines devised best to facilitate search, it is necessary that the Classification Division should remain in existence permanently; although it is probable that the size of its force may be greatly reduced after the work of revision shall have been completed, and a complete resurvey made of all its classes, subclasses, and definitions. If the division is not retained as a permanent part of the office, the same condition is bound to result as has arisen under the methods of classification employed up to 1898, before the establishment of the Classification Division.

Furthermore, there are certain definite functions closely related to the work of devising and working out a classification of patents for the performance of which there should be a division in the Patent Office qualified to act for the whole office. This is essential in order that the great mass of work to be accomplished may not, in the future, result as to these functions in a breaking up of the office administration into as many divisions as there are examining divisions. Among the most important of these functions, which will always exist in the Patent Office, is that of deciding finally which one of the examining divisions of the office shall receive and examine applications. As the Patent Office is at present organized, applications are distributed to the examining divisions by the Application Division, this distribution being largely a clerical duty, involving only a superficial knowledge of the functions in examination performed by each examining division. When an examiner has received an application which he thinks does not belong to him he submits it to that examiner who, he thinks, ought to receive it. The second examiner submits it to the one he thinks ought to receive it, unless he assumes the first receiving it should keep it. The uncertainty and difficulty in finding a home for the application does not necessarily indicate they do not know the classes of invention assigned to them for examination, or are incapable of understanding the relation of one main subdivision or class to another. The difficulty arises in interpretation of the invention as claimed in each individual application. When an issue is reached between the examiners, the application is forwarded to the Classification Division, accompanied by a

letter from each examiner, who is supposed to state fully his reasons why it should not be assigned to him, and why he thinks it should go to another particular division. Sometimes these reasons are stated in full, and sometimes they are not. At present, Wednesday afternoon is the time set for hearings. Sometimes the entire afternoon is occupied and sometimes only a couple of hours.

The number of applications submitted varies from week to week. In the first six months of 1912, 372 applications were submitted formally for classification and decided. A ruling is generally dictated and a copy is sent to the division which is to receive the application and a copy retained for reference in the Classification Division. The hearing and deciding all these disputed cases by the examiner of classification will consume perhaps half of his week, sometimes more.

In Appendix K to this report will be found examples of classification rulings by the Classification Division, which illustrate the intricacies of some of the problems presented. Such disputes will always arise as long as the examination system is retained. The commissioner would not be able to decide them with sufficient care without taking too much of his time. The Classification Division being fully acquainted with the contents of each class and subclass of the Patent Office classification is the division of the office best qualified to make decisions in these matters and the function should be left permanently to this division.

Another duty closely related to the classification of United States patents, which will always exist in the Patent Office, is the handling of the weekly issue of patents, placing them in their correct class and subclass and accurately stamping them accordingly. By order of October 7, 1899, the stamps for stamping titles of classes and subclasses are required to be delivered to the Classification Division by an examining division when any particular class had been revised by the Classification Division; thus when the revision of the classification of United States patents shall be completed, all stamps will be located in the Classification Division. After a class is reclassified, the examiner in passing to issue any application relating thereto attaches to the drawing a slip and indicates thereon the class and subclass in which he thinks the patent, if issued, should be placed, and also notes the desired cross references. In the weekly issue of patents those in reclassified classes are sent to the Classification Division, and original and cross-reference cards are made, cross references mounted and all are stamped and entered on the various lists and then distributed to the proper divisions and to the search room.

In order to permanently retain the advantages of uniform classification, this work must always be done by the Classification Division. The duties of the commissioner and assistant commissioners are too pressing and arduous to allow them to take charge of this work.

Furthermore, it will be extremely difficult for any official having duties of such multifarious character to take intelligent cognizance of the details of any classification carried to that refinement which the niceties to which the industrial arts have now attained necessitates. It is probable that if there were no Classification Division, and the classification were left as formerly to the several examining divisions, no cross referencing would be done from one class to another if those classes were in different divisions. It never has been done in the past, and one of the great benefits of the Classification Division has been that it supplied numerous cross references in connection with the revision of classes.

The Classification Division must also always have the custody of the official classification records of the office, such as the card index, numerical list of patents, transfer sheets, stamps for revised classes, etc.

A highly important accessory to the task of revision of the classification, and one which should permanently be a function of the Classification Division, is a subject-matter index of instruments and processes that may be the subject of invention, arranged alphabetically and referring to class and subclass where classified. This index should be not merely of subclass titles, some of which would be useless as index titles. It should be an index of all names of industrial means in the language, as well as of trade names and local designations not found in dictionaries, where such are known. Such an index has been in contemplation, by the Classification Division, for some years and a nucleus has been formed. One difficulty now in the way of such a work is the rapid changing of the classification in its revision. No classification in any field and for any purpose attains its greatest utility without a good index. The collection of material for this index to the Patent Office classification will always be a current work.

The Classification Division is charged, broadly speaking, with improving for the office and for the public all facilities for search. Ultimately the public search room and the scientific library should be put under the supervision of the examiner of classification, to secure not only theoretically correct consolidation of functions but also the uniformity in results which such a consolidation should bring. The examiner of classification is in a better position to judge, from the point of view of the entire Patent Office, what are the needs of the public search room and of the scientific library than any other official of the office. This consolidation should, however, be postponed until the revision of classification of United States patents shall be completed, as it would not be advisable to multiply the duties of the Classification Division while the revision of classification is in progress.

RECOMMENDATIONS AS TO THE CLASSIFICATION DIVISION.

The recommendations as to the Classification Division which the commission wishes to emphasize as most urgently calling for action at the present time are as follows:

1. Enlargement of the force of assistants in the Classification Division to 50, all of the rank of assistant examiners receiving $1,800 per annum or more, to be appropriated for for work in this division, and provide for the appointment of an assistant examiner of classification as assistant chief of division.

2. Selection of one of the force of 50 assistants, who shall be a skilled chemist for the supervision of the work of compiling the "card index to chemica' literature."

3. Enlargement of the clerical force of the Classification Division sufficiently to handle the increased work resulting from the enlargement of the force of examiners and to bring up to date and carry on currently hereafter the "card index to chemical literature."

4. Turn over to the Assistant Chief of the Classification Division by administrative order of the Commissioner of Patents the duty of holding classification hearings and of preparing decisions thereon.

5. Turn over to the Assistant Chief of the Classification Division such other duties relating to the work of the divisions as the examiner of classification shall deem it best to place upon him, to the end that the examiner of classification may be left free to devote his undivided attention to the work of directing and supervising the revision of classification of United States patents and the other work devolving upon the division by reason of the statute in pursuance of which it was created.

6. The retention of the assistant examiners engaged in the division upon the work of classification, eliminating their detail to examining divisions, and freeing them from the distraction of duties now placed upon the division unrelated to its proper functions.

7. Putting in possession of the Classification Division a complete set of copies of patents suitable for search and handling in order that the work of classification may go on without interfering with the copies of the public search room or the copies of the primary examiners.

8. Selection of two skilled workers who shall be considered members of the clerical force of the Classification Division, to undertake and keep up to date, under the supervision of the examiner of classification, the arrangement of foreign patents in the scientific library in accordance with the respective foreign classifications.

RATES OF COMPENSATION.

The question of the compensation that should be paid to the chief and assistant chief of this division and to assistant examiners of the Patent Office is discussed in chapter 7 on Personnel.

CHAPTER 6.

THE SCIENTIFIC LIBRARY AND THE SEARCH ROOM.

Under present organization of the Patent Office these divisions are under the chief clerk. They are important both to the office and to the public as repositories of facilities for search which the patent law presumes will be thoroughly utilized before a patent monopoly shall be granted, namely, United States patents, foreign patents, and literature which may contain publications of ideas sufficient to serve as references against the granting of patents. The literature is very important, as well as stores of information concerning the state of various industries or groups of industries necessary to give that broad view of a field of invention requisite to the determination of questions of novelty, utility, and invention.

The public search room is, as its name indicates, of importance primarily to the public, which finds here the United States patents, arranged in accordance with the Patent Office classification. A searcher may here determine before submitting an application to the office whether or not the idea contained in it has been anticipated by prior patents, may select patents in various fields which he may desire to purchase from the Patent Office, and may find models of specifications, claims, and drawings as guides for the proper drawing up of applications. The public search room is likewise of great importance to the Patent Office as a repository where may be found the entire number of United States patents,[1] classified, the only other means of securing access to the same material similarly arranged being to journey around among the 43 examining divisions of the office.

The scientific library is, perhaps, of equal importance to the office and to the public, as the repository of the office for literature of books, pamphlets, periodicals, trade catalogues, and for a supposedly complete set of foreign patents from several of the leading countries granting patent monopolies.

These two divisions of the office should ultimately be combined and consolidated with the Classification Division. The Classification Division should not, however, be burdened with the additional function of supervising the administration of this consolidated search division of the Patent Office until its important function of revising

[1] With the exception of a few thousand issued before 1836.

the classification of United States patents is completed. The consolidation of the public search room with the scientific library should not, however, be delayed, but both should at once be placed under the immediate supervision of a competent man, who should be of the grade of first assistant examiner, trained in search so that he may be fully cognizant of the needs of those using the facilities of the library search room and acquainted to a practical extent with the necessities of a library and public reading room.

It should be stated that consolidation of the public search room with the scientific library does not mean that the facilities for access to the United States patents should be identical with those for access to the foreign patents and the literature contained in books, periodicals, etc. Under present conditions it would probably be unwise to compel use of the same tables, supports, etc., for searching the United States patents that are used for search among foreign patents and books, etc. However, this is a matter of detail which is distinctly minor in comparison with the necessity of bringing both these divisions, identical in function, under the supervision of a trained, alert, competent man.

The statements which follow as to present conditions in the public search room and in the scientific library, and the recommendations which accompany these statements, are made upon the premise that it is of the greatest importance to a proper administration of our patent law that every facility should be furnished both the office and the public for convenient and thorough search as to novelty, utility, and invention. Some of the statements and recommendations go merely to the matter of securing for the Patent Office a comprehensive, thorough administration of the office. Others call for additional appropriations, which it is believed will be well repaid in increased efficiency of the office and in more careful search and preparation of applications by the public.

THE SCIENTIFIC LIBRARY.

More space for the library is needed at the present time, and in a few years, if the library shall expand as undoubtedly it should, this need will be most urgent. The library now occupies about 6,000 square feet of space, of which 1,735 are given to the clerical force, 1,800 to the reading room, 1,947 to the bookstacks, and about 600 in the gallery and basement for storage of duplicate copies of patents, bound periodicals, and books considered of little or no use in the library proper. What additional space at present is needed and will be needed in the future must be considered in the light of statements to follow. It is probable that doubling the number of square feet allotted to the library would give sufficient space for the present and for some years to come.

The present quarters of the library are badly ventilated and lighted, and, like most of the Patent Office space, much in need of cleaning. Much has been done in the past six months in freeing the library and its contents from a quantity of dirt so great as to prevent full use of what material the library possesses, but much remains to be done. The need of better equipment for the library is likewise a need which this division of the Patent Office has in common with the rest of the office.

The library now has accession numbers of books, pamphlets, and bound volumes of periodicals running up to 94,000, but this does not accurately represent the number of books, etc., now in the library owing to the fact that many accessioned publications, such as catalogues, pamphlets, etc., have been removed from the library. The total number of volumes is probably in the neighborhood of 75,000. The fact that only an approximation to the total number of volumes contained in the library can be made is evidence in itself of conditions in the library which should not exist. The library has never kept such an accession record as it should of books, pamphlets, periodicals, trade catalogues, etc. Such a record properly kept, as in the Library of Congress, would furnish all information necessary at any time as to receipt, binding, changes in name of periodicals, etc., and of the total numbers of volumes in the library at any stage of its history. Provision for the starting of such an accession record should be made at once. It is believed that the present clerical force of the library is sufficient for this if the work of the library should be redistributed and certain work now being performed should be eliminated.

There is an obvious need in the library of elimination from the shelves (which now total 12,000 feet) of many textbooks and bound volumes of periodicals for which it is hard to imagine any practical use as being of assistance in search. During the past six months fully 10,000 volumes of books, periodicals, duplicate patent volumes, and Government publications, not relating to the work of the library, have already been removed and are now stored in the basement of the Patent Office awaiting final disposition. Of course it is conceivable that in making a search almost any publications may be of use, but given the alternative between a large assortment of material unavailable for want of space and assistance and a smaller amount in perfect arrangement, it would seem that the latter condition is desirable. There are libraries in the city where medical and agricultural searches may be made with greater accuracy than in the scientific library of the Patent Office. The elimination of the useless volumes, however, as well as the addition of volumes which the library should contain, seems to be a matter which should be left to a committee chosen by

the Commissioner of Patents by reason of their thorough acquaintance with the necessities of search. Final disposition, therefore, of the volumes which have already been taken from the library shelves and of volumes which should be removed in the future, should not be made until such a competent committee, constituted probably of examiners in the Patent Office, shall have made the selection. This should be done at once, as it is an inexcusable use of shelf space in the scientific library and of storage space in the galleries and in the basement to have so many useless volumes on hand. By statute, the Library of Congress has the option of taking over such volumes as are found unnecessary in any of the libraries in particular divisions of service. This will probably answer, in some cases, the question as to the disposition of these volumes which are useless to the Patent Office.

In the 43 examining divisions are bookshelves which contain many volumes taken from the scientific library. Recently the library has called back to its shelves from the examining divisions those volumes for which the examining divisions found by experience they had no permanent use. There are, however, at present a total of 2,460 volumes scattered among the examining divisions which the various divisions consider of such importance to their work as to require that they should be immediately at hand. About 10 per cent of this total are copies of the British Abridgments, of which there is a complete set in the scientific library. About one-third of the total number of volumes is duplicated on the shelves of the scientific library, leaving about 1,500 volumes supposedly in the library, but inaccessible to the public and to examiners in other divisions than those having the volumes, except by a journey to the rooms of the particular examining division which is now retaining them. These 1,500 volumes should be duplicated in the scientific library in order that it may have a complete set of all volumes, readily accessible to the entire Patent Office and to the public, and it should be a permanent policy of the scientific library to have duplicate copies of books, pamphlets, periodicals, and trade catalogues which are of such importance as to be required within the rooms of an examining division for immediate reference.

Proper administration of the scientific library, aided by respect on the part of examiners for the library's rules, would eliminate a condition which now exists and which seriously hampers the efficiency of the library. The matter referred to here is the practice of examiners taking books from the shelves of the library without making a proper charge for them, retaining them for such time as they see fit, often removing them from the Patent Office Building.

The choice of new volumes for the scientific library and of the lists of periodicals for which the Patent Office should regularly make subscription is a matter which should be left to a permanent committee of

the Patent Office, appointed by the commissioner, and composed of examiners in whom confidence can be placed as to their ability to select publications which will be of the greatest assistance to search. This committee should not be merely an advisory committee to the librarian, but should be invested with discretion as to choice. Full information should be secured by it, periodically, from the examining divisions and the other divisions of the Patent Office, and so far as possible from the public, as to what publications are of greatest importance. No doubt many volumes now in the Library of Congress should be duplicated in the Patent Office library.

The annual appropriation of $2,500 for the purchase of books, pamphlets, periodicals, etc., for the scientific library is annually spent. A very small balance is turned back into the Treasury every year (for the fiscal year 1912, $54), but this balance represents books ordered but still due, and orders canceled upon receipt of information that books ordered can not be furnished. Of the $2,500 appropriation, $806.95 was used during the fiscal year 1912 for the transportation of United States patents abroad in exchange for foreign patents transmitted free of cost by foreign Governments to the United States. It is recommended that a separate appropriation of $1,000 be made annually for the transportation of United States patents abroad, and that the appropriation to be expended by the scientific library for the purchase of books, pamphlets, periodicals, etc., be raised to $4,000. The library is now much hampered in its choice of publications by insufficient funds, this insufficiency being a particularly embarrassing limitation upon the purchase of very important periodicals which the Patent Office library should have.

During the fiscal year 1912 over 4,000 volumes of the scientific library were bound, rebound, or repaired, a far greater number than the average of previous years. There is a vast amount of binding and repairing, however, which must be done in order to preserve extremely valuable books, periodicals, and foreign patents in the scientific library from utter ruin and to make their contents accessible for search. It is estimated that the cost of such binding, at present absolutely necessary, will not be less than $20,000. The Patent Office is at present required to secure an allotment out of the $40,000 authorization to the Interior Department (for the fiscal year 1913) for miscellaneous printing and binding. It is recommended that an appropriation of $20,000 be made specifically for the binding now urgently needed for the scientific library of the Patent Office.

The Patent Office encounters great difficulty in securing prompt return from the Government Printing Office of volumes sent to it for binding or repair. Attention should be called to the necessity for accelerating the work of the Government Printing Office upon binding of foreign patents for the scientific library. Very important searches

are being made constantly among the patents forwarded currently to the United States by foreign Governments, especially Germany, France, and England. It is a great inconvenience for public searchers to be compelled to go to the Government Printing Office in order to secure access to foreign patents there retained for binding. This is the only alternative, however, unless the examining divisions are to be constantly under the necessity of showing public searchers through their files of foreign patents, a procedure which, it is obvious, can be satisfactory neither to the examiners nor to the public. There is much to be done in the scientific library toward making available and accessible its bound volumes, pamphlets, periodicals, and trade catalogues.

The securing of proper space and equipment for the library, placing it under the supervision of a competent trained librarian, and the addition to the library of several good assistants, thoroughly competent to give aid in search, are most obvious needs of the library. Further than this, however, facility in search in the material at hand in the library can only be secured by classification, indexing, and digesting this material by workers fully acquainted with the necessities of search and entirely in the light of these necessities.

The Classification Division of the Patent Office, to a discussion of the duties of which chapter 5 of this report is devoted, is charged by the statute in pursuance of which it was created with the duty of revising and improving the classification by subject matter of all letters patent and printed publications in the United States Patent Office which constitute the field of search in the examination as to novelty of invention for which application for patents are or may be filed. Chapter 5 describes the various duties which this statute imposes upon the Classification Division. Many of them obviously relate to the scientific library, as the Patent Office is now organized. Among the first of these is a classification of foreign patents. It is said in chapter 5 that "the foreign patents retained in the library of the Patent Office for public search should be classified, and it is the plan of the office so to do, in accordance with the published foreign classification of the country from which the patents are received." It is apparent, and communications received from experienced public searchers bear out this statement, that this matter of arranging the foreign patents in the scientific library in accordance with the classification of the several foreign countries, is among the most pressing needs of the library at the present time. Searchers are to-day under the necessity, in making a search, of taking from the shelves, in some cases, hundreds of volumes of German patents, as they are not arranged in accordance with a classification which brings together even incompletely patents which may be a reference one for the other, but instead are placed on the shelves in chronological order. Recently an attempt has been made to arrange French patents in the

library in accordance with the French classification, and it is stated by public searchers that this has been a great assistance to them. In the case of English patents, the very complete classified British Abridgments take the place, to a considerable extent, of an arrangement of the patents themselves in accordance with the English classification, but this further step would be, as in the case of the German and French patents, of great assistance in search, and should be undertaken. In chapter 5, in speaking of the classification of foreign patents, it is said that the sets of foreign patents in the scientific library are very incomplete. Of over 250,000 German patents issued up to the present time, the first 60,000 are not in the office; likewise there are over 6,000 missing out of the total of over 450,000 French patents. Steps should be made to complete the files in the Patent Office of foreign patents, in triplicate wherever possible, and for the future the office should receive three copies of every foreign patent issued. There should be a checking up of the files of foreign patents in the scientific library, in the various examining divisions, and in the storage space of the Patent Office, to determine exactly what foreign patents are missing. As is stated in chapter 5, on the Classification Division, "the task of arranging the foreign patents in the library, in accordance with the several foreign classifications, should be undertaken at once by at least two skilled and careful workers, working under the supervision of the examiner of classification."

In chapter 5 on the Classification Division, the following statement is made in relation to the classification of books and pamphlets:

> Books and pamphlets, it is believed, should be classified in accordance with an approved library classification. Preferably the classification of the Library of Congress should be applied, as this would make the scientific library and the Library of Congress available under a uniform classification.

This classification should be commenced at once by the force engaged in the scientific library. At present the books and pamphlets on the shelves are classified very simply, in accordance with the Cutter system, and arranged in accordance with this classification. It is recommended that this system of classification and arrangement be discontinued and that the Library of Congress classification be started.

This book classification and arrangement should be supplemented ultimately by an abstract or a good title index, classified in accordance with the classification of United States patents, where this should be found practical, but this work should be undertaken by the Classification Division after the revision of the classification of United States patents shall have been completed.

It is apparent that, in addition to a classification of books and pamphlets, the scientific library of the Patent Office is in need of a thorough overhauling of its present catalogue and an extension of

this catalogue to include every book, pamphlet, periodical, trade catalogue, or other matter received by and retained in the library.

A careful abstract of the material contained in periodicals should be made, as stated in chapter 5 dealing with the Classification Division, as in the case of material in books and pamphlets, in accordance with the classification of United States patents. The undertaking of this work is, however, likewise a matter which should await the completion of the revision of classification of United States patents. In this connection it should be stated here that the scientific library has for some years been making an index to literature contained in periodicals, and that the results of this work, contained on many thousand cards, are now available in the library. This indexing has, however, been carried on by clerical help in the scientific library, unskilled in matters pertaining to search, and has been very incomplete; it has not been kept up to date. Only a few of the foreign periodicals are now being indexed. It is obvious that such an important work should be prosecuted by individuals skilled in the necessities imposed by the patent law, and such can not be the case when it is left to untrained workers of the clerical force of the library. At present, three clerks are giving about one-half of their time to this indexing of periodical literature, and the present librarian is likewise devoting considerable of his attention to the same project. It is obvious, from communications received by the commission from public searchers of long experience, that this card index to periodical literature is of but slight, if any, assistance to them. The commission understands that for the purpose of determining the titles of articles in periodicals, past or current, experienced public searchers, and examiners in the Patent Office as well, make use, not of this card index to periodical literature, but of the Deutsches Repertorium, now known as "Fortschritte Der Teknik," a work which makes reference to articles contained in almost every technical periodical wherever published. It is believed that until such time as the Classification Division shall have completed the revision of classification of United States patents and shall be, therefore, free to take up the work of preparing an index and abstract to periodical literature, both the public and the Patent Office will be sufficiently guided as to the title of articles by reference to the Fortschritte Der Teknik. The discontinuance of work on the card index to periodical literature will permit of the prosecution by the library of much needed work in other lines, notably the keeping of a complete accession record, heretofore mentioned.

In connection with the subject of periodical literature it should be stated that a committee chosen, as previously suggested, for the purpose of selecting books, periodicals, etc., to be added to the scientific library would doubtless find that many periodicals referred

to in the Fortschritte Der Teknik should be added to the list of periodicals now subscribed for.

The "card index of chemical literature" now being prepared in the Classification Division has reached a stage where it would be of material aid if a complete set could be furnished to the scientific library for use by the office and the public, leaving the set in the Classification Division as a working set for the force engaged in its compilation.

It is believed that access to books and periodicals in the scientific library should be regulated as in other reference libraries. Certain standard books, commonly used, probably should be kept in special alcoves to which access by the public could be had. Other books should be accessible only on order, an attendant securing the required book. Exceptions to this latter rule, however, could be made by permit from the librarian, particularly when an examiner or other member of the Patent Office force is making a search. Access to periodicals should be treated in the same way, although the current numbers of such periodicals should be located in some place where they can be reached without the aid of an attendant. This latter point is a matter of considerable immediate importance, as there is no place in the scientific library where access may be had to current periodicals, excepting at the desks of the several members of the library force who are engaged in the work of preparing the card index to periodical literature.

Lastly, in relation to the scientific library, it should be emphasized that there is the greatest need at the present time of skilled and careful supervision on the part of a trained librarian. To aid in finding material for searchers, the library should have also trained assistants, men who have a broad knowledge of physics, chemistry, and engineering. Without proper supervision and without the presence in the library of skilled assistants who can lend to a searcher, not only entire willingness to help, but also a comprehensive knowledge of what the library contains and the facilities for finding it, the library can not be of real value to the office or the public. To make it what it should be, the first consideration is adequate quarters specially adapted to library use.

THE PUBLIC SEARCH ROOM.

Additional space for this division of the office must be furnished. A cursory glance among the heavily laden stacks and busy search tables is sufficient to apprise one of the fact that more room is a prerequisite to securing any other important improvements in the facilities here afforded the public and the office. As the work of the Classification Division progresses in its revision of the classification of United States patents, the addition of cross reference and search

cards, most important to thorough search, adds to the crowded condition of the shelves of the search room. With patents issuing from the office at the rate of about 35,000 per year, it is apparent that the present state of affairs will soon be intolerable. Furthermore, it is obviously impossible under present conditions for the search room to be provided with duplicate sets of all United States patents which should be here available.

In the foregoing discussion of the Classification Division it is urged that for the purpose of revising the classification of United States patents assistants engaged on classification work should be provided with a set of United States patents provided especially for their use. This would obviate the necessity of taking from the search room patents included in classes undergoing revision. The inconveniences resulting from the present practice, both to the office and to public searchers, has been spoken of in chapter 5. Patent attorneys of long experience and of high standing have protested against the practice of the Patent Office of allowing the sets of patents in the search room to be far from complete at any time. Furnishing to the Classification Division for its work a complete set of United States patents will overcome largely this present difficulty.

Further than this, however, there is need of a complete checking up of patents in the search room to restore patents or drawings, claims or specifications which have been removed by vandals or which have been lost or misplaced in other ways. Patents torn or badly soiled should be replaced. In this connection it should be said that even the great amount of handling which some of the patents in the search room undergo does not excuse the filthy condition in which they are found. They should be replaced as soon as their condition has become at all objectionable. Current attention to this matter requires, of course, a different system of making the patents available to the public from that which now prevails.

The replacing of torn, mutilated, and dirty copies should be accompanied by thorough use of a vacuum cleaner to remove dust from the shelves and floor.

As previously stated, the search room should be provided with two complete sets of patents. No public library of any importance possesses but one copy of books which are in such continuous demand as are the copies of patents.

The public should not be allowed access to the alcoves containing the copies of patents. The field of search should be obtained from the classification book (preferably, of course, before coming to the search room). It can not be obtained from a mere inspection of titles or numbers on the binders or shoe boxes containing classified copies of patents, and there is no reason other than this why the public should be admitted to the alcoves. Attendants to wait promptly on the

public should secure the groups of patents which a searcher wishes to examine, the searcher selecting these groups (comprising subclasses) from the classification book. Securing and replacing patents by attendants would provide to a large extent the inspection necessary to insure that torn, mutilated, and dirty patents are not replaced on the shelves.

Copies of patents should not be removed from their proper position associated with other copies of a subclass except by attendants. If, for any reason, it is necessary to remove a copy of a patent, application should be made to the person in charge of the room. The much needed checking up of patents in the search room, heretofore mentioned, would no doubt disclose that many patents supposedly missing from the shelves are misplaced, having found their way into classes and subclasses with which they have no relation. In order to prevent this removal of patents except by an attendant upon application to the person in charge of the room, a remounting of all of the patents in the search room is essential, a margin being left sufficient for binding in a steel-cased binder, provided with a lock, the key to which should be in the possession of the person in charge of the room. Besides keeping patents in their proper relation to one another, such a method, it is believed, would effectually prevent separation of specifications from drawings and claims, excepting, of course, in cases of vandalism.

In remounting the search-room copies the backing should be thin and tough and perhaps of muslin. This would not only add to the life of a copy but should prevent curling and allow of a much more economical storage than is at present possible.

In speaking of the scientific library, it has been stated that foreign patents therein should be arranged in accordance with the classification of the country from which they come. Elsewhere (in chapter 5) it is stated that the examiner's copies of foreign patents should be arranged in accordance with the classification of the United States patents, but that this arrangement should await the completion of the work of revision of classification of United States patents by the Classification Division. It is believed that the arrangement of the third copies of foreign patents in accordance with the United States classification, and the location of this complete set in the search room would be advantageous to both the office and the public. Obviously this would require considerable space, but it is hoped that by the time the Classification Division is ready to undertake such an arrangement of foreign patents (for the examining divisions and for the search room) ample space for the Patent Office will have been provided.

Placing in the search room abstracts of United States patents, classified in accordance with the United States classification, would

provide for the public and for the office facilities for search comparable to that now furnished as to British patents in the classified British Abridgments. The value of such a set of classified abridgments of the United States patents has been emphasized both by officials of the office and by experienced public searchers. The matter of making such abridgments has been discussed in another section of this report.

Finally, the rule of silence in the search room should be strictly enforced. This matter is, of course, only one of several with which a proper supervision of the search room should concern itself. As an aid to the securing of the quiet essential to persons making important searches, the floor should have noiseless coverings over those portions which are traveled and upon which the chairs are placed.

CHAPTER 7.

PERSONNEL OF THE PATENT OFFICE.

The following is a brief statement of the duties of the principal officers of the Patent Office and of the examining and clerical forces:

COMMISSIONER OF PATENTS.

The commissioner is the head of the Patent Office, and his duties are both administrative and judicial. In his administrative capacity he formulates the rules which govern the practice of the office and decides all questions arising in the various divisions of the office which relate to the enforcement of those rules. In his judicial capacity, he hears and determines all appeals from the decisions of the examiner in charge of trade-marks and labels, and he is the court of last resort in the Patent Office from the decisions of the examiner of interferences and from the decisions of the board of examiners in chief, which is a board to hear appeals from the decisions of the various examining divisions. The commissioner is appointed by the President by and with the advice and consent of the Senate. He is required to give bond for the faithful performance of the duties of his office in the sum of $10,000. His salary is $5,000 per annum.

ASSISTANT COMMISSIONERS.

The commissioner is assisted in both his administrative and judicial duties by a first assistant commissioner and an assistant commissioner, whose duties are, generally speaking, of the same character as those of the commissioner and are such as are assigned to them by him. They are appointed by the President by and with the advice and consent of the Senate. The first assistant commissioner receives $4,500 per annum; the assistant commissioner, $3,500.

LAW EXAMINERS.

There are in the office of the commissioner two law examiners, whose duties are to assist the commissioner and assistant commissioners in the performance of their judicial duties. It is their business to examine authorities and prepare decisions in accordance with the conclusions reached by the commissioner and assistant commissioners. The law examiners are chosen from the ranks of assistant

examiners and are appointed by the Secretary of the Interior upon the nomination of the Commissioner of Patents. The salary of each is $2,750 per annum.

BOARD OF EXAMINERS IN CHIEF.

Next to the commissioner the highest judicial authority of the office is the board of examiners in chief. This is a board of appeals and its functions are purely judicial. It has no administrative authority. It consists of three members, who are appointed by the President, by and with the advice and consent of the Senate, and who are required by the law to be persons of competent legal knowledge and scientific ability. They are usually chosen from among the principal examiners, and are generally selected because of their long experience in examining work. The board of examiners in chief hears and determines the validity of adverse decisions of examiners upon applications for patents and reissues of patents, and also all appeals from the action of the examiner who first makes the examination upon motions to dissolve interferences, and from the examiner of interferences in cases involving the priority of invention. They are also required by law to perform such other like duties as the commissioner may assign to them. The salary of each is $3,500 a year.

PRINCIPAL EXAMINERS.

The examination of applications for mechanical patents is, at the present time, divided among 43 examining divisions. A principal examiner is in charge of each division. It is a principal examiner's duty to supervise the work of his assistants, of whom there are in each division from 6 to 9. Ordinarily, a principal examiner does not personally examine many cases, as supervisory duties leave him but little time to devote to examination work. A principal examiner is appointed by the Secretary of the Interior, upon the nomination of the Commissioner of Patents, from the ranks of assistant examiners. The rank of principal examiner is seldom attained in less than 8 or 10 years and more frequently only after 20 or 30 years of service. To be qualified to fill the position of a principal examiner, an examiner must be a man of superior education, must have a thorough knowledge of engineering and technical matters, of the principles of patent law, and of the practice of the Patent Office. The salary of each is $2,700 per annum.

In addition to the 43 regular examining divisions, there are 3 divisions which are especially appropriated for. The heads of these divisions are on the same footing as the principal examiners. They are the examiner of trade-marks and designs, the examiner of classification, and the examiner of interferences.

THE EXAMINER OF TRADE-MARKS AND DESIGNS.

This examiner has charge of applications for patents on designs and applications for the registration of trade-marks and labels—all applications for patents on other than mechanical devices—and his duties with respect to trade-marks and designs are the same as those of a principal examiner. He is appointed by the Secretary of the Interior on the nomination of the Commissioner of Patents. He is assisted in his work by assistant examiners of the several grades. His salary is $2,700 per annum.

EXAMINER OF CLASSIFICATION.

The examiner of classification, who is appointed by the Secretary of the Interior on the nomination of the Commissioner of Patents, is charged with the duty of classifying all United States patents and all publications which constitute the field of search in the examination of applications for patents. In case of any difference of opinion between the examiners in charge of the various examining divisions as to the proper assignment of cases to their division for examination, the examiner of classification is the final authority. He is aided by assistant examiners. His salary is $3,600 per annum.

EXAMINER OF INTERFERENCES.

The examiner of interferences, who is appointed by the Secretary of the Interior on the nomination of the Commissioner of Patents, formally declares all interferences which are forwarded to him by the several principal examiners, mails the notices of interferences to the parties, fixes the time for filing preliminary statements, hears and determines all motions arising in interferences, or transmits to the principal examiners such as are to be determined by him, and, after final hearing, renders a decision awarding priority of invention to the successful party. In performing his work he is aided by assistant examiners of the several grades. His salary is $2,700 per annum.

ASSISTANT EXAMINERS.

The assistant examiners are of four grades, the fourth assistant being the lowest. These assistants are appointed to the office by the Secretary of the Interior, upon the nomination of the Commissioner of Patents, after they have passed a competitive civil service examination. This examination covers physics, embracing the requirements of a general college course; mathematics, including arithmetic, algebra, plane geometry, plane trigonometry, analytics, and differential calculus; technics, covering the general field of mechanics, mechanic arts, industrial arts and processes, and applied chemistry;

chemistry, inorganic, including qualitative analysis, and elementary organic; mechanical drawings; French or German. The successful contestants are usually young men who have been trained in the technical schools and colleges of the country. The work they have to do is in no sense clerical, but highly technical and legal. A member of the examining body is required, in every case he handles, to act as scientific expert and as judge. The salary of an assistant is $2,400, $2,100, $1,800, or $1,500 per annum, according to whether he is first, second, third, or fourth assistant.

CHIEF CLERK.

The chief clerk is the principal assistant of the commissioner in his administrative work and in dealing with questions relating to the management of the clerical force of the office. He is required by law to have all the qualifications of a principal examiner. He must be trained in the law, for it is necessary that the person holding this position should have a thorough knowledge of the work of the office in its various branches. He attends to the general correspondence of the office, except such as relates to the examination of applications, which is handled in the examining divisions. Much of this correspondence has to do with legal questions and is answered by him without reference to the examining divisions of the office, thus saving a great deal of time for himself and the examiners. He has charge of the expenditure of moneys appropriated for the use of the Patent Office. Besides having charge of the force of clerks in his immediate office who attend to the details connected with all these matters, he has general supervision of appointments and promotions in the general clerical force, which embraces six divisions of clerks, and also of certain special clerks who are designated as heads of rooms, such as the application room and the docket room. His salary is $3,000 per annum.

CHIEFS OF CLERICAL DIVISIONS.

There are six clerical divisions, each supervised by a division chief, and each provided also with an assistant chief or with a clerk detailed to act as such. Each chief of division receives a salary of $2,000 per annum.

DETAILS OF CLERICAL DIVISIONS.

The clerical divisions are:

(1) The Assignment Division, in which are recorded all assignments of inventions for which applications for patents have been made and of patents which have already been issued;

(2) The Draftsman's Division, which passes upon the execution of all drawings which are filed with applications for patents, and also

makes new drawings or corrections in those already on file, when requested;

(3) The Mail Division, which opens and distributes the mail;

(4) The Division of Manuscripts and Photolithographs, which furnishes copies of all official papers which are requested and ordered by attorneys and others for use in the prosecution of applications or in litigation. It also has charge of contracts for the making of photolithographic copies of drawings;

(5) The Division of Publications, which fills all orders for printed copies of patents; and

(6) The Issue and Gazette Division, which has charge of the issue of patents after the applications therefor have been allowed, and of the preparation of copy for the Official Gazette.

FINANCIAL CLERK.

The financial clerk receives and accounts for all moneys which come into the office. He is appointed by the Secretary, upon the nomination of the Commissioner of Patents, and is under bond for the faithful performance of his duties in the amount of $20,000. His salary is $2,250 per annum.

LIBRARIAN.

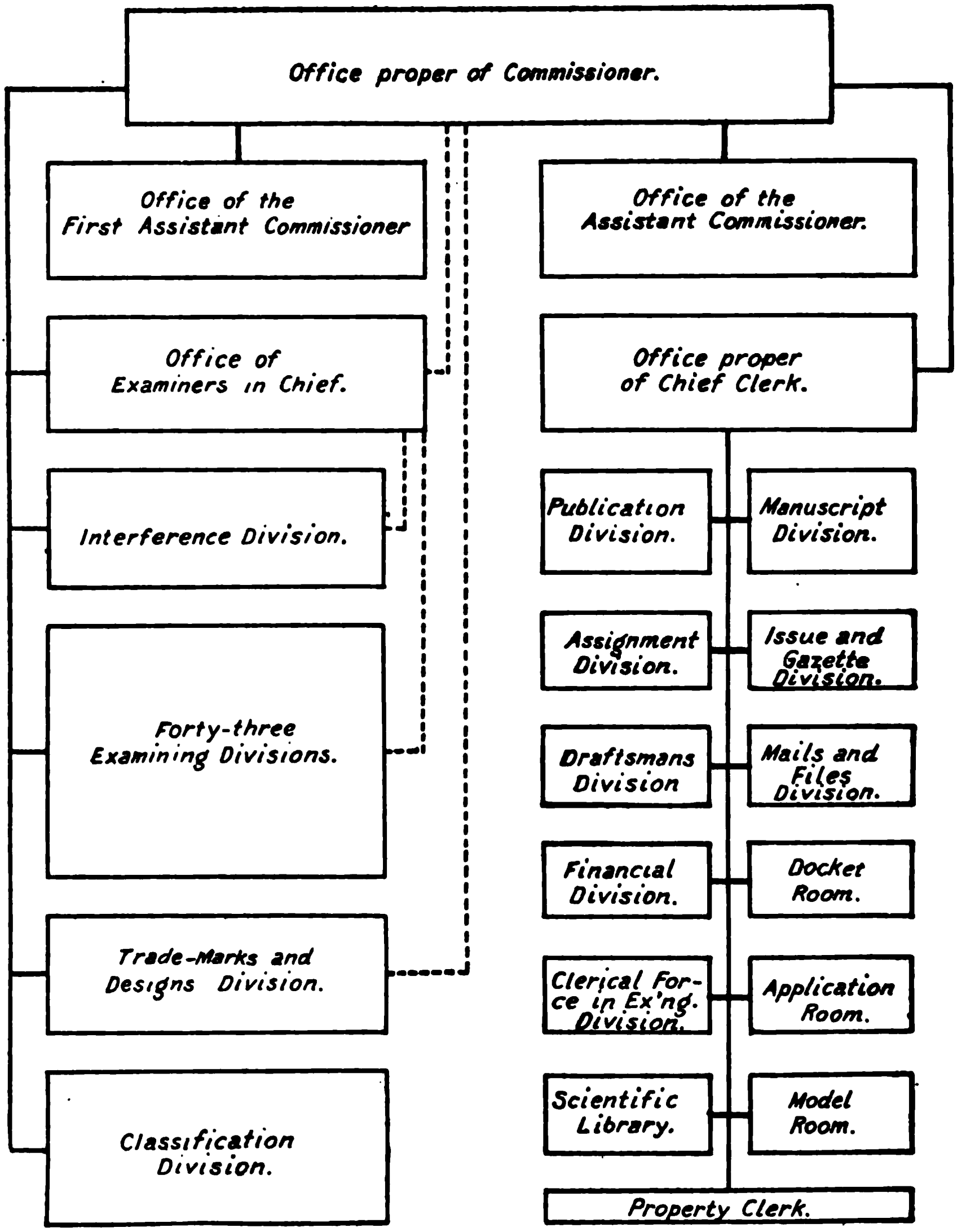
There is in the Patent Office a large scientific library for the use of the examining corps in the examination of applications which is also open to the use of the public. This library is in the charge of a librarian who is appointed by the Secretary of the Interior upon the nomination of the Commissioner of Patents. His salary is $2,000 per annum.

CLERICAL FORCE.

The clerical force, as well as the messengers, laborers, and other employees, are appointed by the Secretary of the Interior on the nomination of the commissioner. They are divided into a number of grades, and are assigned by the chief clerk to the several examining and clerical divisions as the needs of the work require.

CHART SHOWING ORGANIZATION.

The following chart shows graphically the organization of the Patent Office. The heavy lines connecting the various offices and divisions show the administrative control, while the dotted lines indicate the order of appeal.



Solid connecting lines indicate administrative control; dotted lines show line of appeal.

STATEMENT SHOWING DISTRIBUTION OF FORCE.

The following is a statement showing the assignment to duty at the present time of the force of the Patent Office:

Office of the Commissioner of Patents:	
The commissioner	$5,000
Private secretary	1,800
Confidential clerk	1,800
1 law examiner	2,750
1 interpreter	900
Office of the first assistant commissioner:	
First assistant commissioner	4,500
1 law examiner	2,750
1 stenographer	1,600
Office of the assistant commissioner:	
Assistant commissioner	3,500
1 first assistant examiner acting as law examiner	2,400
1 stenographer	1,200
1 stenographer	900
Office of examiners in chief:	
3 examiners in chief at	3,500
1 first assistant examiner	2,400
Forty-three examining divisions:	
43 principal examiners at	2,700
58 first assistant examiners at	2,400
55 second assistant examiners at	2,100
78 third assistant examiners at	1,800
110 fourth assistant examiners at	1,500
66 clerks, class 1, at	1,200
17 clerks at	1,000
1 draftsman	1,000
5 copyists at	900
9 copyists at	720
1 assistant messenger	720
1 classified laborer	600
10 classified laborers at	480
11 messenger boys at	360
Interference Division:	
1 examiner of interferences	2,700
1 first assistant examiner	2,400
5 second assistant examiners at	2,100
1 third assistant examiner	1,800
2 clerks, class 2, at	1,400
2 clerks, class 1, at	1,200
1 assistant messenger	720
Classification Division:	
1 examiner of classification	3,600
2 first assistant examiners at	2,400
11 second assistant examiners at	2,100
9 third assistant examiners at	1,800
1 clerk, class 3	1,600
1 clerk, class 1	1,200
1 clerk	1.000

Classification Division—Continued.	
9 copyists at	$900
3 assistant messengers at	720
1 laborer	600
1 classified laborer	480
Trade-Marks and Designs Division:	
1 examiner of trade-marks and designs	2,700
2 second assistant examiners at	2,100
6 assistant examiners of trade-marks and designs at	1,500
1 clerk, class 4, acting examiner	1,800
1 clerk, class 3, acting examiner	1,600
2 clerks, class 1, acting examiners, at	1,200
1 clerk, class 2	1,400
4 clerks, class 1, at	1,200
2 clerks at	1,000
2 copyists at	900
1 copyist	720
1 classified laborer	480
1 messenger boy	360
Office of the chief clerk:	
Chief clerk	3,000
1 general correspondence clerk	1,400
1 correspondence clerk	1,200
1 appointment and pay clerk	1,200
2 stenographers at	1,200
1 stenographer	1,000
1 stenographer	720
1 telephone attendant	480
1 messenger	840
1 classified laborer	480
Scientific library:	
1 librarian	$2,000
1 translator	1,800
1 translator	1,400
1 clerk, class 2	1,400
6 clerks, class 1, at	1,200
2 clerks at	1,000
1 copyist	900
1 laborer	600
1 laborer	480
Finances:	
1 financial clerk	2,250
1 clerk, class 4	1,800
1 clerk, class 3	1,600
3 clerks, class 1, at	1,200
2 clerks at	1,000
Applications for patents:	
1 application clerk	1,800
6 clerks, class 1, at	1,200
4 clerks at	1,000
4 copyists at	900
1 copyist	720
1 minor clerk	480
1 messenger boy	360

Docket clerk's office:	
1 docket clerk	$1,800
1 clerk, class 4	1,800
1 clerk, class 2	1,400
4 clerks, class 1, at	1,200
8 clerks at	1,000
2 copyists at	900
2 assistant messengers at	720
Models:	
1 clerk, class 3	1,600
1 clerk	1,000
Property clerk:	
1 property clerk	1,000
3 messengers at	840
2 assistant messengers at	720
3 laborers at	600
Issue and Gazette Division (B):	
1 chief of division	2,000
1 assistant chief	1,800
2 clerks, class 2, at	1,400
9 clerks, class 1, at	1,200
8 clerks at	1,000
9 copyists at	900
5 copyists at	720
1 classified laborer	480
1 messenger boy	360
Draftsman's Division (C):	
1 chief of division	2,000
1 assistant chief	1,800
1 clerk, class 4	1,800
1 clerk, class 3	1,600
1 clerk, class 1	1,200
3 skilled draftsmen at	1,200
8 draftsmen at	1,000
1 clerk	1,000
3 copyists at	900
4 copyists at	720
1 assistant messenger	720
Assignment Division D	
1 chief of division	2,000
1 clerk, class 4	1,800
4 clerks, class 2, at	1,400
7 clerks, class 1, at	1,200
17 clerks at	1,000
17 copyists at	900
3 copyists at	720
1 laborer	600
Manuscript Division (E):	
1 chief of division	2,000
2 clerks, class 3, at	1,600
1 clerk, class 2	1,400
7 clerks, class 1, at	1,200
16 clerks at	1,000
23 copyists at	900

Manuscript Division (E)—Continued.

15 copyists at	$720
9 assistant messengers at	720
2 classified laborers at	480
4 messenger boys at	360
3 temporary typewriters	480

Publications Division (F):

1 chief of division	2,000
1 clerk, class 3	1,600
2 clerks, class 2, at	1,400
3 clerks, class 1, at	1,200
11 clerks at	1,000
8 copyists at	900
8 copyists at	720
2 assistant messengers at	720
1 classified laborer	600
3 classified laborers at	480
24 messenger boys at	360

Mails and Files (G):

1 chief of division	2,000
1 assistant chief	1,800
1 clerk, class 4	1,800
1 clerk, class 2	1,400
4 clerks, class 1, at	1,200
5 clerks at	1,000
6 copyists at	900
2 copyists at	720

COMPARATIVE SUMMARY OF PERSONNEL.

The following table shows the personnel of the Patent Office, in various years, from 1880 to 1912, inclusive:

Table showing the officers and employees of the United States Patent Office in various years from 1880 to 1912, inclusive.

Position.	1880	1885	1890	1895	1900	1905	1910	1912
Commissioner	1	1	1	1	1	1	1	1
First assistant commissioner	1	1	1	1	1	1	1	1
Assistant commissioner							1	1
Chief clerk	1	1	1	1	1	1	1	1
Examiners in chief	3	3	3	3	3	3	3	3
Examiner of interferences	1	1	1	1	1	1	1	1
Examiner of trade-marks	1	1					1	1
Assistant examiners								6
Examiner of classification							1	1
Examiner of designs	1	1						
Law clerk		1	1					
Law examiners				2	2	2	2	2
Principal examiners	22	24	30	32	36	39	43	43
First assistant examiners	23	26	32	34	38	42	68	68
Second assistant examiners	23	26	36	38	42	50	73	73
Third assistant examiners	23	30	41	43	51	61	88	88
Fourth assistant examiners		25	50	52	60	70	110	110
Financial clerk	1	1	1	1	1	1	1	1

Table showing the officers and employees of the United States Patent Office in various years from 1880 to 1912, inclusive—Continued.

Position.	1880	1885	1890	1895	1900	1905	1910	1912
Librarian	1	1	1	1	1	1	1	1
Chiefs of divisions	.....	8	8	8	8	8	8	8
Assistant chiefs of divisions	.....	3	3	3	3	3	3	3
Private secretary	.....	.....	.....	.....	.....	.....	1	1
Translator	.....	.....	.....	.....	.....	.....	1	1
Machinist	1	1	1	1	1	1	.....	.....
Clerks, class 4	4	8	4	5	5	7	9	9
Clerks, class 3	5	6	5	6	6	7	9	9
Clerks, class 2	19	18	12	14	14	14	17	17
Clerks, class 1	30	50	50	51	57	67	96	120
Clerks, at $1,000	42	32	25	25	27	27	90	90
Copyists	55	75	60	60	96	106	90	90
Copyists, at $720	.....	4	76	76	41	31	56	50
Draftsman	4	4	3	3	3	3	3	3
Draftsmen, at $1,000	..	3	4	4	4	4	4	4
Messenger and purchasing clerk	1	1	1	1	1	1	1	1
Assistant messengers	6	.....	23	23	29	[illegible]	29	29
Skilled laborer	1	1	1	1	1	1	.....	.....
Attendants, model room	10	15	15	15	15	15	.....	.....
Laborers, at $660	25	62	.....	.....	.....	.....	.....	.....
Laborers, at $600	14	45	45	45	51	51	14	14
Laborers, at $480	20	40	45	45	50	50	45	45
Messenger boys	.....	.....	15	15	34	39	40	40
Total	369	522	600	606	679	734	934	939

This table shows that Congress has authorized a substantial increase in the force of the Patent Office from time to time; but notwithstanding this fact, two general complaints have arisen concerning the operations of the office:

(1) That the work is in arrears; and

(2) That a large number of invalid patents have been issued.

This commission was finally directed by a resolution of Congress approved August 21, 1912, to "investigate fully and carefully the administration of the Patent Office with a view to determining whether or not the present methods, personnel, equipment, and building of said office are adequate for the performance of its functions * * *."

COMPLAINT OF WORK IN ARREARS.

This complaint is justified by the records of the Patent Office. The work of a division is said to be current when no cases have been awaiting action on the part of the office for more than 30 days. In the Official Gazette is published weekly a statement for each division of the office showing: (1) The oldest new application, (2) the oldest action by applicant awaiting office action, and (3) the total number

of applications awaiting action. The following table, which shows the condition of the office at the close of business October 5, 1912, is typical. It will be noted that only 2 of the 43 examining divisions, the third and the twenty-fifth, are what might be called up to date on new business, that is, having acted on all the new cases submitted within the previous month. The total number of applications awaiting action on that date was 24,438.

[Official Gazette, Oct. 8, 1912]

APPLICATIONS UNDER EXAMINATION.

Condition at close of business, October 5, 1912.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		Number of applications awaiting action.
		New.	Amended.	
313	1. Fences; harrows and diggers; plows; seeders and planters; trees, plants, and flowers	Aug. 1	July 22	693
128	2. Bee culture; curtains, shades, and screens; dairy; label pasting and paper hanging; paper files and binders; pneumatic dispatch; pneumatics; presses; store service; tobacco	June 19	...do....	554
175	3. Annealing and tempering; electric heating and rheostats; electrochemistry; metal founding; metallurgy; plastic metal working	Sept. 6	Sept. 23	215
232	4. Bridges; conveyers; excavating; hoisting; hydraulic engineering; loading and unloading; metallic building structures; traversing hoists	July 30	July 22	586
167	5. Bookbinding; harvesters; jewelry; music	July 5	...do....	590
318	6. Bleaching and dyeing; chemicals; explosives; fertilizers; medicines; preserving; sugar and salt; substance preparation	Aug. 8	Aug. 29	390
312	7. Educational appliances; clutches; games and toys; mechanical motors; optics; velocipedes	Apr. 1	June 10	943
131	8. Beds; chairs; furniture; kitchen and table articles; store furniture; supports	June 25	Sept. 4	753
142	9. Air and gas pumps; fluid-pressure regulators; hydraulic motors; motors, fluid; motors, fluid-current; pumps; wind wheels	May 28	June 22	515
235	10. Carriages and wagons	June 3	July 17	365
154	11. Boot and shoe making; boots, shoes, and leggings; button, eyelet, and rivet setting; harness; leather manufactures; nailing and stapling; whips and whip apparatus	July 18	Aug. 16	315
322	12. Elevators; journal boxes, pulleys, and shafting; lubrication; machine elements	July 23	July 24	835
329	13. Arms, projectiles, and explosive charges, making; bolt, nail, nut, rivet, and screw making; boring and drilling; button making; chain, staple, and horseshoe making; driven, headed, and screw-threaded fastenings; gear cutting, milling, and planing; metal drawing; metal forging and welding; metal rolling; metal tools and implements, making; metal working; needle and pin making; nut and bolt locks; turning	July 8	Aug. 10	646
307	14. Compound tools; cutting and punching sheets and bars; farriery; metal bending; metal ornamenting; sheet-metal ware, making; tools; wire fabrics and structure; wire working	Aug. 5	Aug. 29	497

Condition at close of business, October 5, 1912.—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		Number of applications awaiting action.
		New.	Amended.	
308	15. Bread, pastry, and confection making; coating; fuel; glass; laminated fabrics and analogous manufactures; liquid coating compositions; paper making and fiber liberation; plastic block and earthenware apparatus; plastic compositions; plastics	June 17	Aug. 7	1,046
109	16. Radiant energy; telegraphy; telephony	July 5	July 5	385
303	17. Matrix making; paper manufactures; printing; type-bar making	Aug. 19	Aug. 28	341
327	18. Injectors and ejectors; liquid heaters and vaporizers; miscellaneous heat-engine plants; steam and vacuum pumps; steam engines; steam-engine valves	July 31	Aug. 13	256
236	19. Dampers, automatic; furnaces; heat-distributing systems; stoves and furnaces	Aug. 5	Aug. 8	519
179	20. Artificial limbs; builders' hardware; dentistry; locks and latches; safes; undertaking	July 20	Aug. 7	334
112	21. Brakes and gins; carding; cloth finishing; cordage; felt and fur; knitting and netting; silk; spinning; weaving; winding and reeling	June 4	July 5	520
249	22. Aeronautics; air guns, catapults, and targets; ammunition and explosive devices; boats and buoys; firearms; marine propulsion; ordnance; ships	June 14	Aug. 19	390
379	23. Accoustics; coin handling; horology; recorders; registers; time-controlling mechanism	July 10	July 20	602
144	24. Apparel; apparel apparatus; sewing machines	July 13	Aug. 5	539
315	25. Butchering; mills; thrashing; vegetable cutters and crushers	Sept. 4	Sept. 6	187
106	26. Electricity, generation; motive power	Mar. 13	Apr. 26	763
372	27. Brushing and scrubbing; grinding and polishing; laundry; washing apparatus	Aug. 3	Aug. 1	479
65	28. Internal-combustion engines	July 1	June 28	1,113
147	29. Coopering; fire escapes; ladders; roofs; wheelwright machines; wooden buildings; wood sawing; wood turning; woodworking; woodworking tools	May 27	Aug. 21	657
152	30. Illuminating burners; illumination; liquid and gaseous fuel burners; typewriting machines	June 24	Sept. 7	417
172	31. Alcohol; ammonia, water, and wood distillation; charcoal and coke; gas, heating and illuminating; hides, skins, and leather; hydraulic cement and lime; mineral oils; oils, fats, and glue	July 9	July 26	384
278	32. Carbonating beverages; dispensing beverages; dispensing cans; ornamentation; packaging liquids; refrigeration	Aug. 1	Sept. 7	249
71	33. Cutlery; domestic cooking vessels; masonry and concrete structures; paving; tents, canopies, umbrellas, and canes	July 5	July 26	525
304	34. Railways; railway brakes; railway rails and joints; railway rolling stock; railway ties and fasteners	July 3	July 8	699
244	35. Buckles, buttons, clasps, etc.; card, picture, and sign exhibiting; garment supporters; toilet	Aug. 12	Aug. 14	970
264	36. Drafting; driers; engraving; measuring instruments; photography	Aug. 8	Aug. 5	702
107	37. Electric lamps; electricity, conductors; electricity, conduits; electricity, general applications	July 15	July 22	443
378	38. Animal husbandry; artesian and oil wells; fishing and trapping; stationery; stoneworking	July 5	July 12	811
321	39. Water distribution	June 4	July 5	583

Condition at close of business Oct. 5, 1912—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		Number of applications awaiting action.
		New.	Amended.	
280	40. Baggage; bottles and jars; check-controlled apparatus; cloth, leather, and rubber receptacles; deposit and collection receptacles; metallic shipping and storing vessels; package and article carriers; paper receptacles; special receptacles and packages; wooden receptacles	Aug. 20	Aug. 21	651
125	41. Railway draft appliances; resilient tires and wheels	July 17	July 23	674
279	42. Electric railways; electric signaling; railway signaling; signals	July 19	Aug. 13	475
382	43. Baths and closets; electricity, medical and surgical; fire extinguishers; sewerage; surgery; water purification	July 22	Aug. 12	415
161	Trade-marks, designs, labels, and prints:			
	Trade-marks	Aug. 1	July 30	1,217
	Designs	Aug. 24	Aug. 27	172
	Labels and prints	Sept. 26	Sept. 25	73

Oldest new case, Mar. 13; oldest amended, Apr. 26.
Total number of applications awaiting action, 24,438.

The following table shows the oldest new case, the oldest amended case, and the number of applications awaiting action on January 1 and July 1, from 1892 to 1912, both inclusive:

Table showing the oldest new case, the oldest amended case, and the number of applications pending on Jan. 1 and July 1, in various years from 1892 to 1912, inclusive.

Year.	Jan. 1.			July 1.		
	Oldest new case.	Oldest amended case.	Number applications awaiting action.	Oldest new case.	Oldest amended case.	Number applications awaiting action.
	Days.	*Days.*		*Days.*	*Days.*	
1892	.....	.....	.....	157	101	9,387
1895	63	46	4,312	42	44	4,936
1900	52	35	5,392	64	44	5,674
1901	57	47	5,330	64	54	7,512
1902	72	69	8,510	116	109	10,689
1903	101	108	11,448	51	82	9,842
1904	51	77	10,423	101	122	13,089
1905	121	128	14,347	112	115	16,077
1906	138	262	17,353	91	272	21,915
1907	66	64	10,674	77	82	13,634
1908	139	180	18,540	93	180	20,043
1909	178	104	16,144	117	63	17,153
1910	165	98	19,679	116	73	14,935
1911	107	90	15,617	110	93	17,836
1912	122	97	18,344	143	138	21,059

COMPLAINT OF NUMBER OF INVALID PATENTS.

With reference to the complaint that is sometimes made that too large a proportion of the patents granted prove invalid, it is impossible to determine the exact facts in the matter. In the first place, a great number of patents are issued on articles that are never put upon the market. Since those patents have no commercial value, no suit is ever brought to test their validity, and therefore the patents stand as valid even if worthless. In the second place, no exact measure can be obtained of the number of patents which cover articles that are commercial, because there is no means of knowing how many persons holding patents make compromise agreements or how many patents are purchased by manufacturers for small sums that would prove invalid if tested in the courts.

There can be no doubt, however, that an improvement in the efficiency of the examining body of the Patent Office and improvement of the facilities for search, including the completion of the work of reclassifying patents, would greatly reduce the number of patents issued that are invalid in whole or in part.

REORGANIZATION OF OFFICE NECESSARY.

It is apparent that the specific complaints against the Patent Office just enumerated are in the main correct. The work is in arrears and many patents are proved invalid. The remedy often suggested is a large increase in the force, the argument being that the work is behind because there are not enough people to handle it and that patents prove invalid because they are issued after incomplete search, whereas had the office force been such as to justify a more exhaustive and accurate search they would not have been issued.

After a study of "the present methods, personnel, equipment, and building of the office" it is, however, the opinion of this commission that no considerable increase in the force engaged directly in the examining work of the Patent Office should be made at the present time. On the contrary, the imperative need of the office is not more men but new methods. The duties of the administrative officers should first be more clearly defined; the entire force, both examining and clerical, reorganized; a system of promotions based on efficiency records and promotion examinations established; inefficient employees eliminated; salaries readjusted; adequate office room provided; and equipment furnished for making thorough searches in the most expeditious manner. When the force of the office is working at its highest efficiency it would then be proper to make whatever additions to the personnel are found necessary to carry on the work in a satisfactory manner. The problem of the Patent Office in the

future is one of improving methods through the development of better classifications and digests and possibly through other means of expediting the searches rather than of increasing the force from year to year in mathematical proportion to the increase in the number of applications filed and the growth in the extent of the field of search.

DUTIES OF COMMISSIONER SHOULD BE WHOLLY ADMINISTRATIVE.

The reorganization of the office should, in the opinion of this commission, begin with the limitation of the duties of the head of the office. It is apparent that the commissioner has too many and too manifold responsibilities. It is impossible for any one person to supervise and decide with great care all the matters now theoretically within the absolute control of the commissioner, and yet they are all matters of importance that should have the personal consideration of the officer who is responsible for the action taken in each case. This commission has recommended, therefore, in chapter 2 of this report, that the Commissioner of Patents be entirely relieved of his judicial duties, since it is impossible for him to give them the careful consideration they should have and at the same time attend to the administrative duties of his office which are an inseparable part of that office.

At the present time there are 43 practically independent divisions issuing patents under the laws, under decisions of the courts and of the commissioner. Under the practice of the office each examiner is like an independent court and there is no central directing body seeing that the actions taken in all cases are uniform and consistent.

Under the proposed arrangement and separation of administrative and judicial work there would no longer be need for the two assistant commissioners, who now share the mixed duties of the commissioner. One would be necessary, especially in the absence of the commissioner, but with the commissioner relieved of judicial duties and assisted in his administrative work by supervising examiners, a second assistant commissioner would be unnecessary. Neither would there be need for the two law examiners whose duty it is to assist the commissioner in the performance of his judicial duties. Two law clerks should be provided for digesting decisions and similar work.

It is recommended that the salary of the commissioner be increased to $7,500. The present salary is obviously inadequate and is not commensurate with the responsibility and dignity of the position. For the assistant commissioner a salary of $5,000 is recommended.

It is recommended that the supervising examiners, whose place in the organization of the office is stated in chapter 2, be paid $4,000 each per annum.

EXAMINERS IN CHIEF TO BE FINAL JUDICIAL AUTHORITY.

All judicial functions should be lodged exclusively with the corps of examiners and the board of examiners in chief. The decisions of this board should be final within the Patent Office on all questions of patentability and priority of invention. There should be no appeal to the Commissioner of Patents or to any other authority except the Court of Appeals of the District of Columbia. The reason for this recommendation is explained in chapter 2, and is that it would greatly shorten the procedure to final adjudication and in no way impair the rights of appellants. It does not seem proper to allow the decisions of a technical body to be overruled by one officer who may have neither the technical nor the legal training to qualify him to exercise such authority. The Commissioner of Patents is always likely to be appointed for political reasons rather than because of any particular technical knowledge he may possess, and should be appointed because of ability as an administrative officer. On the other hand, the members of the board of examiners in chief are appointed to their places for the very reason that they do have the special knowledge required to enable them to decide wisely where matters pertaining to patent rights are in dispute. It is unreasonable, therefore, and unwise as a matter of public policy, that the organization of the office should permit the overthrow of their decisions by one not necessarily qualified to pass judgment in the matter.

It is recommended that the salaries of the members of this board be increased to $4,500.

REORGANIZATION OF EXAMINING BODY.

Several criticisms must be brought against the present organization of the examining body of the Patent Office.

NUMBER OF PRINCIPAL EXAMINERS SHOULD BE INCREASED.

It is obvious that the number of principal examiners is inadequate. It is entirely insufficient to carry on the ordinary work of the office, and the result is, naturally, that the work falls in arrears. It is true that the number of principal examiners has increased 95 per cent in the past 32 years, but it has not kept pace with the increase of the work of the office, the annual number of applications for United States patents having increased 200 per cent during the same period, and the total number of patents granted, which must be classified and filed for search each time a new patent is applied for, has increased 324 per cent. The field of search, as represented by United States patents alone, has increased during the past 32 years from 243,795 patents to 1,034,430.

The following table shows the heavy increase in the number of applications filed each year. The number of applications filed during the year 1870 was 19,171, while in 1911 the number filed was 69,121, or 260 per cent increase in 41 years.

Table showing the number of applications for patents filed in various years since 1870.

Year.	Number of applications for patents.	Year.	Number of applications for patents.
1870	19,171	1895	40,680
1875	21,638	1900	41,980
1880	23,012	1905	54,971
1885	35,717	1910	64,629
1890	41,048	1911	69,121

A large number of copies of foreign patents are received. These patents have to be sorted and sent to the several examining divisions to which they belong. The examiner then has to go over each one and learn its subject matter sufficiently to classify it, mark its class, have it mounted, stamped, and placed for search. These patents are in several languages, and average over 2,000 annually for each examining division, and the work of classifying can only be done by examiners familiar with the arts to which they relate. A great deal of time is consumed in merely making them available for search. Prior to 1877 only English, French, and a few other foreign patents were printed and received by the Patent Office. In 1877 the German Empire began the publication of patents; in 1877, Switzerland; in 1885, Sweden; in 1895, Norway; in 1897, Denmark; and in 1899, Austria. In 1899 France, which had for many years suspended printing patents for distribution, again sent its patents to the United States.

Not only is the work of the office greatly increased by the increase in the number of applications for patents, but it is increased all the time by the growth in the extent of the field of search.

In 1848, when the law providing for four principal examiners and four assistant examiners was passed, the field of search comprised about 16,000 United States patents and 30,000 British and French patents. At the present time each principal examiner has in his classes more United States patents than had been granted in 1848, and more United States patents are now issued in a single year than had been issued altogether up to that time. The field of search is increased with every United States or foreign patent granted. The following table shows the increase in the field of search, as represented by United States patents:

Table showing the field of search as represented by United States patents (including patents for inventions and designs, and reissue of patents).

Year.	United States.	Year.	United States.
1870	106,054	1895	567,002
1875	172,519	1900	684,020
1880	243,795	1905	828,413
1885	336,389	1910	998,500
1890	449,271	1911	1,034,430

These increases in the number of applications filed and the broadening of the field of search have been accompanied by more complicated inventions, involving a larger number of claims which require special consideration. Legal questions have steadily grown more involved, and the number of authorities to be considered has also grown. In 1836, when the search system was established, the questions of law presented were few and simple. The law of patents was then undeveloped. The decisions of the English courts had hardly gone further than to expound the principles upon which a lawful monopoly could be founded. Only four patents had been the subject of published decisions by the United States Supreme Court. Prior to 1848 there were but 12 published decisions of the Supreme Court on patent questions. Now the law of patents forms a considerable body of jurisprudence. It embraces a library of textbooks and many thousands of judicial precedents.

It is not sufficient for a patent practitioner or examiner that he know the patent statutes and rules of practice. The statutes define the modes of procedure, the rights and limitations of inventors and patentees, enlarging the privileges they would have under a common-law grant, but the fundamental principles of patents are the principles of common law, and both examiners and attorneys must have a good knowledge of common law in order to discharge their duties properly. The questions raised before the office are the same as those raised before the Federal courts. Any defense that would invalidate the patents would, in law, prevent the grant thereof. In deciding a patent case, a Federal judge has the assistance of skilled counsel who present both sides of the question to aid him in reaching a correct conclusion on the law, skilled experts to explain the scientific or mechanical principles involved, and all the time he deems necessary to reach a correct conclusion. The examiner passes upon the same question, but, as the cases are secret and ex parte in the Patent Office, only one side is presented by counsel, and the examiner must secure his own evidence and be his own expert, acting as the representative of the public and as judge in the case. His knowledge of patent law

and the principles on which it rests should, indeed, be even wider and deeper than that of the Federal judge.

To take care of this constantly increasing volume of business it has been necessary from year to year to provide additional examiners. This increase in the force in the past has been provided chiefly by increasing the number of assistant examiners at the lower grades. The number of assistant examiners has been increased out of proportion to the increase in the number of principal examiners, and with disastrous results to the work of the office, as will be shown. It will be seen from the following table that while the number of principal examiners was increased between 1880 and 1912 from 22 to 43, or 95.5 per cent, the number of first assistants was increased from 22 to 63, or 186.4 per cent; the number of second assistants was increased from 22 to 73, or 231.8 per cent; and the number of third assistants was increased from 22 to 88, or 300 per cent. In addition to this the grade of fourth assistant was created in 1882, and since that time the number in that grade has increased to 110 in 1912. In other words, while the number of principal examiners has increased 95.5 per cent during the past 32 years, the number of assistant examiners has increased 406.1 per cent.

Table showing the number of examiners and assistant examiners in various years from 1880 to 1912, inclusive, and the per cent of increase in each.

Fiscal year ending June 30—	Principal examiner.	First assistant examiner.	Second assistant examiner.	Third assistant examiner.	Fourth assistant examiner.	Total examiners (exclusive of principal examiners).	Average number of examiners to each principal.
1880	22	22	22	22	.....	66	3.0
1885	24	28	28	30	35	121	5.0
1890	30	32	36	41	50	159	5.3
1895	32	34	38	43	52	167	5.2
1900	36	38	42	51	60	191	5.3
1905	39	42	50	61	70	223	5.7
1906	39	42	50	61	70	223	5.7
1907	40	50	60	70	80	260	6.5
1908	41	53	63	73	83	272	6.6
1909	42	58	68	78	100	304	7.2
1910	42	58	68	78	110	314	7.5
1912	43	63	73	88	110	334	7.8
Increase 1880–1912...per cent ...	95.5	186.4	231.8	300.0	.....	406.1	160.0

This means that the principal examiner has, on the average, the work of nearly eight assistants to review instead of three, as was the case in 1880; he can therefore give only about half the time to reviewing the work of his assistants that he was able to give in 1880.

The following table shows that while the increase in the number of principal and assistant examiners combined has generally somewhat

more than kept pace with the increase in the number of applications filed each year, yet the average number of applications to be passed upon by each principal examiner has increased from 1,046 a year in 1880 to 1,614 a year in 1912, or from 3.9 applications per day (counting 270 working days per year) to 6 per day in 1912.

Table showing, the average number of new applications per examiner per year in various years from 1880 to 1912, inclusive.

Year.	Principal examiners.	Assistant examiners (all grades).	Total examiners.	Number of applications filed.	Average number of applications per examiner (all grades) per year.	Average number of applications per principal examiner per year.	Average number of applications per principal examiner per day.
1880	22	66	88	23,012	262	1,046	3.9
1885	24	121	145	35,717	246	1,488	5.5
1890	30	159	189	41,048	217	1,368	5.1
1895	32	167	199	40,680	204	1,271	4.7
1900	36	191	227	41,950	185	1,166	4.3
1905	39	223	262	54,971	210	1,410	5.2
1906	39	223	262	56,482	216	1,448	5.4
1907	40	260	300	58,762	196	1,469	5.4
1908	41	272	313	61,475	196	1,499	5.6
1909	42	304	346	65,839	190	1,568	5.8
1910	42	314	356	64,629	182	1,539	5.7
1911	43	334	377	69,121	183	1,607	6.0
1912	43	334	377	[1] 69,392	184	1,614	6.0
Increase, 1880–1912...per cent...	95.5	406.1	328.4	201.5	−29.8	54.3	54.3

[1] Estimated.

While it is true that many of these original cases are disposed of by the citation of a single reference, yet others require days and even weeks of labor and the preparation of exhaustive opinions involving a most minute discussion of the principles involved in the application under consideration. In addition to passing on these original cases that must be disposed of each working day, the principal examiner is called upon to consider a large number of actions on amended cases which are recommended by his assistants but which should also be reviewed by him.

In addition to this it should be remembered that the work of the examiner is, in many cases, more difficult now than formerly because of the enormous increase in the field of search, the greater complexity of inventions, and the increased number of legal decisions and the multitude of commissioner's decisions which he must follow.

The fact that every principal examiner has more work to review than any one person is capable of doing accurately results in the work of incompetent assistants frequently passing muster. On account of the pressure brought to bear upon an examiner to keep his work up

to date, he finds it necessary to set any new assistant who may be assigned to his division to work at once without the proper amount of preliminary training or special instruction. Having little time for close scrutiny of results, it is not strange if the work which the principal examiner approves is sometimes not the best.

Taking all these facts into consideration, this commission recommends that the number of principal examiners be increased from 43 to 55 as rapidly as office space can be provided for them. The commission believes that the examining corps is about sufficient at the present time to do the examining work of the office, and suggests that the number of principal examiners be increased to 55, as it would take that number of men to properly supervise the work of the present 334 assistant examiners. That means that each principal examiner would oversee and pass on the work of about six assistants, and that is all that should be expected of one man. In some cases, depending on the class of work to be done, less than six assistants and in other cases more than six would be required in a division.

SALARIES OF PRINCIPAL EXAMINERS SHOULD BE INCREASED.

The salaries paid principal examiners are, in the opinion of this commission, not adequate. It is recommended, therefore, that the salary be increased to $3,600. It is not contended that increasing the salaries of examiners will increase their efficiency—except perhaps in so far as a larger salary may leave the mind of the examiner less distracted by financial worries—but it is believed that an individual with the technical training, the legal knowledge, and the office experience required to perform efficiently the duties of a principal examiner is worth at least $3,600 a year to the Government, especially as the heads of divisions in other scientific and technical bureaus usually receive about that sum. This increase of salary should be conditional on efficiency. Those who are below a proper standard of efficiency should be reduced to positions of less responsibility or eliminated from the service by means of a system of efficiency records to be established by the Civil Service Commission under the act of August 23, 1912, and a system of promotion examinations which should be applied to the entire examining force at once. The system of efficiency records and promotion examinations proposed would remove any inefficient employees at once and make way for the efficient ones who under the present system of promoting by longevity are held back until finally in many cases they leave the service.

SALARIES OF ASSISTANT EXAMINERS SHOULD BE READJUSTED.

The second reform which should be accomplished in the reorganization of the examining force is the reclassification of assistant examiners. This is necessary in order to protect the office from the

annual loss which it now sustains through the resignation of from 4.2 to 9.5 per cent of its assistant examiners. They usually resign for the purpose of practicing patent law before the Patent Office as private attorneys or as representatives of industrial corporations. At the present time the patent departments of our industrial corporations are made up almost entirely of men who have received their training in the Patent Office; and the same is true of many of the large law firms engaged in the practice of patent law. These corporations and large firms do not hesitate, when in need of a man, to offer salaries considerably in excess of those paid by the Patent Office—accompanied with guaranties for the future greater than any opportunity that can be looked for in the Patent Office. While their right to do so is not challenged, it is unfortunate that those who have been trained largely at public expense can not be held in the public service. It takes several years for an examiner to become really efficient. During that time the Government pays him $1,500 or $1,800 a year. If, as soon as the point of full efficiency is reached, he resigns, the Government has lost a large part of the amount of salary paid him up to that time. The following table shows the number of examiners who have resigned during each of the last 10 years:

Table showing the number of examiners and assistant examiners of the various grades who resigned each year from 1901 to 1912, both inclusive.

	Principal.	First assistant.	Second assistant.	Third assistant.	Fourth assistant.	Total resignations during year.	Total employed during year.	Percentage of resignations during year.
1901	1	2	.....	5	6	14	227	6.1
1902	.....	1	4	6	2	13	262	4.9
1903	1	.....	7	8	.....	16	262	6.1
1904	1	.....	1	8	4	14	262	5.3
1905	.....	2	4	13	3	22	262	8.4
1906	1	2	4	14	4	25	262	9.5
1907	1	.....	4	12	5	22	300	7.3
1908	.....	.....	4	5	4	13	313	4.2
1909	.....	1	5	9	5	20	346	5.7
1910	1	1	5	14	9	30	356	8.4
1911	.....	.....	3	13	9	25	377	6.6
1912	.....	.....	3	9	8	[1] 20	377	[1] 5.3
Total resignations in each class.	6	9	44	116	59	234	.....	.....

[1] For 9 months.

It is apparent that any measure within reasonable cost that will hold in office the best of those who now resign—and it is, of course, the most competent who are tempted to resign—is desirable. The salaries paid assistant examiners range at present from $1,500 to $2,400, and it is only after years of service—from 10 to 20 usually—that the maximum salary for assistant examiner is reached. Even

the maximum salary, in the opinion of the commission, is inadequate for men qualified to do well the highly technical work required of assistant examiners. In itself it is not sufficient to hold good men in office against competition. When the slowness of promotions is also considered, it is not at all remarkable that so many young men resign while still in the lower grades. It is difficult enough to get such men in the beginning; it is unfortunate that they can not be retained after they have once entered the service.

Owing to the better salaries offered by commercial concerns, the Patent Office has sometimes had difficulty in getting competent men to take the civil service examination. It has been necessary then to make temporary appointments, selecting such material as could be found and made use of. About the time that these men were trained, the temporary appointments have come to an end and the men had to be dropped. The Patent Office would have little chance at all to obtain good exan iners were it not successful in picking up young men immediately after their graduation from college. These are usually men of fine ability, but without practical experience of any kind, who, while hesitating which unknown road to take, are attracted by the definite proposals of the Patent Office. Able to pass the difficult examinations set for them by the Civil Service Commission and not yet tempted by offers of more lucrative work, they enter the service. Perceiving that there is little hope of rapid promotion or ultimate reward commensurate with their worth, they resign in three or four years after having acquired the experience which is the one thing they have thus far lacked. Many of those who enter the examining corps of the Patent Office are young men of splendid attainments and represent the best product of our American universities. Since the increase of the entrance salary in 1908 less difficulty has been experienced in securing the necessary number of eligibles, but the number of assistants who resign after three or four years of service has steadily continued because of the slowness of promotions. The following quotation from the annual report of the Commissioner of Patents for the year 1907 is interesting in this connection:

> The examiners are all graduates of colleges, mostly polytechnic colleges, and 90 per cent have been graduated in general and patent law, and with office experience are invaluable to the service; but after about three years' service in this office and when they are fully experienced and valuable in the work thereof they are also fully equipped to go out, and do go out to accept positions that pay all the way from $2,000 a year up. The office has become merely a post-graduate school for the technical and legal education of young college men who enter the service. The General Electric Co. has in its patent department 12 or more men who were formerly examiners in this office, and other corporations have taken hundreds from this office, and this company also, like many others, takes men from the graduating classes of polytechnic colleges at higher salaries than are provided on entrance to this office, so that we are now competing with outside institutions for men to do the technical work of the office. One hundred and thirty-five examiners out of a corps of 300 have resigned in a period of less than five years.

To overcome this loss of assistants at the time when they are entering the most useful period of service, the commission recommends a readjustment of salaries for the grades of second and first assistants, and a readjustment of the relative number in each of the four grades. The readjustment proposed is as follows: Let the force of 334 assistant examiners be divided into four classes of equal numbers, 83 in each class, those of the lowest or fourth class receiving an annual salary of $1,500, those of the third $1,800, those of the second $2,250, and those of the first $2,700. This arrangement keeps the salaries for the two lowest grades, those of fourth and third assistants, at the present rates, but by the increase in number and in salaries of the second and first assistants from $2,100 to $2,250, and from $2,400 to $2,700, respectively, has the special advantage of making promotions of the efficient more rapid all along the line.

EXAMINERS ON CLASSIFICATION WORK.

In addition to the 334 assistant examiners referred to there should be an increase of 25 assistants for classification work, as recommended in chapter 5 on the Classification Division, to bring the force of that division to a total of 50 examiners. These 25 extra examiners should be of the grades at $2,700, $2,250, and $1,800.

The commission believes that at the end of the probation period of six months, and before final permanent appointment, an assistant examiner should be required to pass a second examination. This second examination should relate to the rules of practice, office procedure, the statute law of patents, and similar subjects. Such an examination would prevent the young assistant from entering upon the responsible duties of an examiner without the necessary training in office practice and procedure, which frequently happens now through the indifference of the principal examiner or the crowded condition of the work, which makes it impossible for the principal examiner to see that the probationer secures the essential fundamental training. Such an examination would make it incumbent upon the probationer to thoroughly ground himself in these fundamentals, and upon failure to do so he would automatically be eliminated from the service.

PROMOTION SHOULD BE BASED ON EXAMINATIONS AND WORK DONE.

The third reform pertaining to the examining corps of the Patent Office has to do with the manner in which promotions should be made. It is the practice to make promotions on the basis of seniority and the recommendation of the superior officer. When an examiner dies or resigns, his place is ordinarily given to the one in the next grade below him who has been in the service the longest. This system brings to the top automatically the incompetent as well as the

competent. It is discouraging to the efficient, who have to wait with the inefficient for promotion. Even if the recommendations of superior officers should be given more weight theoretically than seniority in office, the result would be practically the same, for each principal examiner would urge the merits of his subordinate for promotion, and in deciding between the protégés of different examiners, those who had been in office longest would naturally be given the preference. The seniority test would, therefore, in the end prevail.

This commission holds that promotion on seniority in any form is to the disadvantage of the office, and recommends that promotions be made on the results of examinations, coupled with the system of efficiency records required to be established by the Civil Service Commission under the act of August 23, 1912. It is sometimes said that the fitness of officials can not be tested by examination. This is probably true in certain offices, but the work of the examining body of the Patent Office requires certain definite fundamental training in physics, chemistry, technics, mathematics, drawing, and languages, coupled with a thorough knowledge of the law of patents, a knowledge of general law, a thorough knowledge of the decisions of the courts affecting patents, of the multitude of decisions of the Commissioner of Patents, and the rules of practice of the office, a knowledge of all of which can be tested. The necessary preliminary training for entrance to the office is tested by the civil-service examination; but when the eligible has entered on his work as fourth assistant examiner the course of study necessary to fit him for the higher branches of the work has just begun. While most of the young men who enter this service have been satisfactorily trained in fundamental subjects of physics, chemistry, technics, mathematics, drawing, and languages, few of them have any special knowledge of either general law or patent law, and none of them knows anything about the decisions made by the various authorities of the Patent Office or the rules of practice. It is manifest, therefore, that if the young examiner is to properly equip himself for the greater responsibility of the higher positions of the office, he must take up at once an extended course of study. Most of the young men who enter this service undertake to qualify themselves in law by entering the law schools in the District of Columbia, and in the work in the office it is assumed that they obtain the necessary knowledge as they go along. At present, however, the assistant examiner's fitness for work is actually tested only on entrance. No test is made at any time of his knowledge of the decisions of the commissioner and of the rules of practice.

While most of the assistant examiners do undoubtedly become qualified in every respect, there is no absolute certainty that they do. Their efficiency is nowhere a matter of record after they have once entered the service. It could, however, be ascertained by examining

the work which they do on the cases assigned to them and by the civil-service examinations covering such matters as they could learn only from experience in the office. In the opinion, therefore, of this commission, promotions should be made on the basis of two records, the record of work actually performed by the candidate in the office and the record made by him in promotion examinations.

No record of individual work is at present kept which could serve as a basis for promotion. With the enforcement, however, of the law passed at the last session of Congress requiring the Civil Service Commission to establish a system of efficiency records for the classified service in Washington, a method of rating the employees of the Patent Office will have to be provided. The commission believes that the efficiency of the employees of the examining force can best be determined by the commissioner, aided by the supervising examiners proposed in this report, rather than by the principal examiners. As the main duty of the supervising examiners would be to review the work of the various examining divisions, they should be in position to know the value of the services rendered by the several employees of the various divisions. Their conclusions as to the efficiency of individual employees might naturally be more impartial than those formed by the principal examiners, although it would be proper for the supervising examiners to consult freely with the principal examiners before rating an individual.

For an office like the Patent Office, where it is very difficult to pass judgment on the quality of an individual's work, the value of any system of efficiency records that may be established is problematical. It will not do to trust entirely to such records as a basis for promotion. These records should be supplemented by other records obtained from examination papers. In the opinion of this commission it is, however, proper that the Commissioner of Patents should have the power to withhold a promotion when the personal characteristics of the candidate for promotion are such as to make his advancement detrimental to the service. It might, for instance, happen that a man of weak moral fiber had special facility in passing examinations, and it would not be in the interest of good administration to place him in the position to which his scholarship would otherwise entitle him.

In order to ascertain as nearly as possible, within the limited time at the disposal of the commission, how many members of the examining force were turning out work that was satisfactory, the commission, with the assistance of officials of the Patent Office, prepared a statement concerning the work of each principal examiner and a similar statement concerning each assistant examiner after consultation with his chief. In rating employees on the quantity of work, ten-tenths was defined to represent the work of an efficient employee,

such as the Government might reasonably expect to secure for the salary paid, and employees whose quantity of work was either greater or less than this standard were to be rated accordingly. In rating employees on the quality of work, "Good" was to be taken as normal, and to represent work worthy of commendation, but not especially so. Work of a quality above or below this standard was to be rated as follows:

"*Excellent.*"—An employee should be rated "Excellent" when he is performing the highest quality of service in the grade to which he is regularly assigned—that is, when he has reached the maximum of efficiency. This implies that on occasions when there is need of ingenuity and initiative the employee is resourceful and equal to assuming responsibility.

"*Very good.*"—An employee should be rated "Very good" when he performs exceptionally satisfactory service, which, however, falls slightly below the standard of "Excellent," in that the employee lacks ingenuity or power of initiative.

"*Good.*"—An employee should be rated "Good" when his work is acceptable and worthy of commendation, but not exceptionally so.

"*Fair.*"—An employee should be rated "Fair" when his work is somewhat inferior, compared with ordinary, acceptable service, being characterized by a defective performance of duties.

"*Poor.*"—An employee should be rated "Poor" when his work is distinctly inferior to ordinary, acceptable service.

"*Very poor.*"—An employee should be rated "Very poor" when his work is extremely unsatisfactory in quantity or quality, or both, but not so unsatisfactory as to be wholly worthless.

"*Nonproductive.*"—An employee should be rated "Nonproductive" when his work is either wholly worthless or so faulty as to consume a large amount of a second person's time in revising it.

The result of this rating with respect to quantity of work performed is shown in the following table:

Table showing the quantity of work performed by the examining force, ten-tenths representing the quantity of work performed by an efficient examiner of the same grade.

Grade.	Three-tenths.	Five-tenths.	Six-tenths.	Seven-tenths.	Eight-tenths.	Nine-tenths.	Ten-tenths.	Eleven-tenths.	Twelve-tenths.	Total.
Grades above first assistant examiner			1			4	12	13	24	54
First assistant examiner	1	1		2	1	7	24	13	13	62
Second assistant examiner		2			4	14	37	9	8	74
Third assistant examiner		1	1	1	4	9	48	10	8	86
Fourth assistant examiner				2	3	18	10	[illegible]	5	[illegible]
Assistant examiners of trade-marks			1				4	1		6
Total	1	4	3	5	12	52	183	72	58	390

The result of this rating with respect to quality of work performed is shown in the following table:

Table showing the quality of work performed by the examining force, "Good" being taken as quality of work performed by an efficient examiner of the same grade.

Grade.	Very poor.	Poor.	Fair.	Good.	Very good.	Excellent.	Total.
Grades above first assistant examiner	.....	1	3	17	12	21	54
First assistant examiner	.....	1	6	20	15	20	62
Second assistant examiner	.....	2	5	29	24	14	74
Third assistant examiner	.....	.....	10	38	30	8	86
Fourth assistant examiner	.....	2	9	53	34	10	108
Assistant examiners of trade-marks	1	.....	1	4	.....	.....	6
Total	1	6	34	161	115	73	390

These ratings are necessarily almost entirely a matter of opinion. They were derived by questioning higher officials and the principal examiners, and thus represent the views of 46 different men. Under the circumstances, they can not be regarded as accurate, and should not be relied upon as finally determining the qualifications of individuals. In the opinion of the commission, there was a tendency to somewhat overrate the men. This was perhaps particularly true of the grade of first assistant examiner.

Taking the list as a whole, however, it is probably the best that can be done in the absence of records as to quantity and quality of work performed.

While these ratings can not be taken as conclusive on any individual group, they do, undoubtedly, show the need of readjustment of salaries. The most equitable way to make this readjustment would be on the record to be kept of work performed and the record to be made in promotion examinations.

It seems proper to recall that the system of promotion examinations has already been tried in the Patent Office, and the statements of those who prospered under them are all to the effect that they were highly beneficial to the service. As there are no records relating to this subject, it is not known what facts and arguments led to the adoption of promotion examinations. The commissioner then in office simply made up his mind to adopt such a system and ordered the examination. This examination was ordered from time to time at the will of the commissioner, sometimes upon a few days' notice, and sometimes a longer notice was given. There is no record of any final order or action which terminated the system. The commissioner then in office simply failed to order any further examinations. These examinations were not compulsory, but those who failed to take them generally did not obtain promotion. Promotions were almost

invariably made in the order of the standing of the examiners on the examination list, although when the commissioner was of the opinion that the next man in order was unsatisfactory for any reason for promotion to the higher grade he would pass the man and take the next lower. The marking was made by a committee who determined exactly what points should be touched upon in order to give a complete answer to each question, and assigned to such points weights in proportion to their importance, the marks on each point being then added to give the complete mark of the question.

TRADE-MARK DIVISION.

A system of efficiency records and promotion examinations should be worked out also for the Division of Trade-Marks and Designs which would meet the requirements of that office. The promotion examination for this division, like the promotion examination for the other examining divisions, should test the examiner's knowledge of the law of patents, the decisions of the courts affecting patents, the decisions of the commissioner, and the office rules of practice, but should be confined to that branch of the law and decisions affecting particularly the issuance of trade-marks and designs.

THE CLERICAL FORCE.

The clerical force of the Patent Office is in an unsatisfactory condition. This is due to two facts: (1) That the salaries are too low—the initial salaries are only $720—and (2) prospects of promotion are very limited. Year after year complaint is made in the annual report of the commissioner that the number of clerks is insufficient to do the work, that it is difficult to obtain competent clerks because of the low initial salary, and that it is impossible to hold those who are secured and prove competent because of the more attractive salaries offered by other departments.

These conditions make it especially difficult to secure competent clerks for the examining divisions, where an accurate knowledge of technical and legal terms is required. At the same time, no matter how efficient a clerk may become as a clerk, and no matter how valuable his services may be as such to the office, it is practically impossible for him to become, in the ordinary course of his duties, sufficiently versed in any part of the technical work of the office to be promoted out of the clerical into the examining force. Without the preliminary scientific training and general collegiate education, his chances for becoming a technical expert through even the most devoted attention to his clerical duties are practically nil. He starts with too great a handicap. Those who come into the office with that preliminary scientific training and general collegiate education have

all they can do to acquire in addition the legal training necessary to make them expert examiners. It is too much to expect that a clerk who lacks the fundamental training as well as the special knowledge should be able to compete with them. At the same time that the Patent Office sets up this barrier to progress in the path of the clerk, it demands clerical talent of a high order in the examining divisions and in other special places. These are conditions inherent in the nature of things and no individual is to be held responsible for them; but the condition of inadequate salaries in return for this admittedly discouraging and in some cases difficult kind of clerical labor is a matter that can be remedied by legislation. (The commission does not wish to be understood to recommend that any more favorable terms be given the clerks for entrance to the examining force than are granted to others. On the contrary, it believes that all persons entering the examining force should be required to pass the regular civil-service examination whether they are in the service or out of it.)

The peculiar conditions attached to clerical labor in any office should be perfectly understood in considering the salaries paid to clerks in that office. There are offices under the Government where the way of a clerk lies open for advancement to the highest position in the office. There is nothing in the nature of the work done in such offices that an individual of good general ability and steady industry even without special education can not in time master. If he be a person of administrative talents and original ideas in handling the work of the office, it is not unreasonable for him to aspire to any place in the organization, even the highest. On the other hand, there are offices, like the Patent Office and the Smithsonian Institution, where the character of the work is so technical that the clerk can hardly hope to become identified with the special work for which the office was created.

These varying conditions should be understood and recognized by the salary-fixing power, and an effort should be made on the one hand to deal justly with the clerks in each individual office and on the other hand to have that action consistent with the treatment of clerks throughout the whole service. There is at present no uniform policy extending to all offices of the Government in the matter of recognizing the peculiar duties that clerks in different offices are required to perform. The two classes of offices should be differentiated in appropriating salaries for clerical labor, those that might be called business offices, like most of the offices in the Treasury Department and in the Department of Commerce and Labor, and those that are technical and scientific, which are found in nearly every department, like the Geological Survey in the Department of the Interior and the Coast and Geodetic Survey in the Department of Commerce and Labor.

The clerk's lack of opportunity for advancement in a technical bureau has been recognized in certain offices in the War Department and the Navy Department. The initial salaries of civilian clerks in the office of The Adjutant General of the Army, for instance, are placed at $1,000. This is presumably a slight recognition of the handicap which they suffer in their ultimate prospects in the War Department by reason of their lack of technical training as compared with commissioned officers. On the other hand, there are offices like the Smithsonian Institution where complaint is made that the handicap of the clerk has been overrecognized in comparison with the lack of recognition of which the scientific assistant complains, and that stenographers whose preliminary training has been accomplished in a few months have sometimes been given a better initial salary than scientific men who have to offer in addition to natural gifts of a high order evidences of a long and expensive education.

The whole subject of salaries for clerks calls for investigation, including a careful comparison of the clerical duties in the different offices of the Government. At present, however, it is safe to say that the clerical staff of the Patent Office, whether compared with the clerical force of the Government's business offices or that of its technical offices, is underpaid. It has apparently been the policy in the past to compensate for the large number of high-salaried men required in the examining force by cutting down the salaries of the clerical force. The result is that, although the work requires clerks of at least as great efficiency as those of other bureaus of the executive departments, the salaries average very much lower. In view of all the conditions outlined above, this commission believes it wise, and indeed absolutely necessary in the interest of good administration, to increase the initial salary in the clerical branches of the Patent Office to $900 per annum in order to make the salary correspond to that paid in other offices.

The clerk once entered on a fair salary, the matter of his promotion should be a question of his efficiency. This will be determined under the system of efficiency records which the Civil Service Commission is required to establish under the act of August 23, 1912. The details of how promotions should be adjusted in accordance with those records is a separate and distinct problem that will have to be worked out by itself. Efficiency records not yet being available, this commission can make no definite recommendations at present as to how promotions should be made.

An effort was made to get some idea of the efficiency of the clerical staff by requiring statements from the Patent Office concerning the work of each clerk. The result is shown in the following tables.

In preparing these tables the office was instructed to classify the employees according to the following definitions:

(A) Subclerical work, requiring some special skill or involving personal responsibility, but not clerical or mechanical in its nature.

Examples of such work are duties ordinarily required of messengers, watchmen, classified laborers, sorters, counters, etc.

(B) Clerical work of a simple or routine character, requiring care, accuracy, and skill.

Examples of such work are mere copying and typewriting; simple indexing; filing cards and papers; briefing contents of letters or documents on back; preparing letters by filling blank forms for official signature; mailing or dispatching; easy stenography; simple bookkeeping, requiring but little knowledge of the theory of accounts.

(C) Clerical work of a routine character, requiring but little original thought or consideration, but requiring judgment, responsibility, and special skill.

Examples of such work are preparing briefs of papers in a case for recording; expert filing; examining property returns; proof reading; issuance and distribution of supplies; examining vouchers and disbursing accounts, under the application of simple standards or requirements; recording cases and transactions where considerable judgment is required to determine the relative importance of factors, and preparing an adequate index thereof; the ascertaining of facts independently and drafting action on average cases; composing and preparing letters for official signature; stenography requiring skill and practice; bookkeeping involving a knowledge of the theory of accounts and departmental records and precedents.

(D) Work more or less routine, involving responsibility, special ability, and original thought, consideration, and investigation.

Examples of such work are directing and instructing clerks of lower grades; expert stenography; editing; the ascertaining of facts independently in complicated cases, and drafting action thereon; serving as confidential clerk to head of department or bureau; bookkeeping involving an extended knowledge of department records and precedents and the handling of intricate accounts; recording complex and difficult cases and properly indexing the same; service in purchasing and issuing supplies; service as paying teller; examining money accounts requiring familiarity with the laws and with regulations and requirements of the Treasury Department.

(E) Work largely supervisory, or requiring the highest order of clerical ability, involving much original thought, consideration, and investigation.

Examples of such work are the investigation of large and intricate cases, requiring familiarity with the laws and decisions of courts and with department practice and policy, and the drafting of action thereon; the conduct of such investigations with the aid of assistants, whose work must be directed and correlated; service as paying teller with large responsibility; acting as chiefs of sections or divisions, and preparing or laying out work for others.

(F) Work of a supervisory, executive, and administrative character.

Examples: Duties ordinarily required of chiefs of divisions and chief clerks.

(G) Professional, scientific, and technical.

In rating employees on the quantity of work, ten-tenths was defined to represent the work of an efficient employee such as the Government might reasonably expect to secure for the salary paid. Employees whose quantity of work was either greater or less than this standard were to be rated accordingly.

Table showing the quantity of work performed by the employees engaged in the various classes of clerical work.

[Ten-tenths represents the quantity of work performed by an efficient employee of the same grade.]

Class of work.	Quantity of work performed.									
	Three-tenths.	Four-tenths.	Five-tenths.	Six-tenths.	Seven-tenths.	Eight-tenths.	Nine-tenths.	Ten-tenths.	Eleven-tenths.	Total.
A			3		2	9	31	90		134
B			1	1	1	28	64	240	3	336
C					1		2	18	2	23
D						1		11	2	14
E			1							1
F								5	3	8
G							2	8		10
Total			5	1	4	36	99	372	10	526

The result of this rating with respect to quality of work performed is shown in the following table:

Table showing the quality of work performed by the employees engaged in the various classes of clerical work.

["Good" represents the quality of work performed by an efficient clerk.]

Class of work.	Poor.	Fair.	Good.	Very good.	Excellent.	Total.
A		11	122	1		134
B		28	304	4		336
C		1	15	5	2	23
D		1	3	7	3	14
E		1				1
F				4	4	8
G			8		2	10
Total		42	452	21	11	526

The following table shows the clerical force distributed according to salary and class of work performed:

Table showing the number of employees in the clerical force of the United States Patent Office distributed according to salary and class of work performed.

Class of work.	Salary.												
	$300	$480	$500	$720	$840	$900	$1,000	$1,200	$1,400	$1,600	$1,800	$2,000	$2,250
A	36	33	13	32	4	10	2						
B			1	40		78	89	118	7	1	2		
C								9	7	3	4		
D								2	2	4	6		
E												1	
F								1				6	1
G							4	3	1	1	1		
Total	36	33	14	72	4	88	95	133	17	9	13	7	1

While these tables are interesting and show the need for readjustment of clerical salaries—they show, for instance, that two men doing the lowest grade of clerical work receive $1,800 each—they are not sufficiently scientific to be used as a basis for readjustment of salaries of any but those that are grossly over or under paid. The ratings shown in these tables are based entirely on the opinion of certain officials. To be scientific and as impartial as anything human can be, such tables should be based on daily records of work performed, account being taken of both quantity and quality. It was, of course, impossible within the time at its disposal for this commission to establish such a record and collect data on which to construct such a table.

Efficiency records once established should be used as the basis for promotions. Longevity should be considered only when persons are of equal merit; in that case the clerk longest in the service should be given the preference. While this commission is convinced that the initial salary of a clerk in this office should be no less than $900, it is not prepared to say what the maximum clerical salary should be, nor how rapidly promotions should be made on a record of efficiency, because it has not had an opportunity of making a detailed study of the clerical work of the office.

At this time it is proper to note in passing that a considerable portion of the clerical force of the Patent Office is engaged in a kind of labor that can be very accurately measured and that might be paid for on the basis of piecework. This work is the preparation of certified documents and records of the Patent Office which are called for and paid for by private individuals. The rate paid is 10 cents a hundred words, and the income derived from the sale of these documents is in excess of what the clerks are paid for doing this work. This commission believes that standards of efficiency could very easily be set for this class of labor and the clerks who do it given salaries in accordance with their relative capacity and actual output.

A promotion scheme similar to that recently worked out for the National-Bank Redemption Agency would apply to this class of workers in the Patent Office.

SUPERANNUATION.

In November, 1911, this commission sent out an inquiry to the various departments and independent establishments in Washington calling for information concerning the number of employees at the various ages to ascertain the amount of superannuation that existed in the service at that time. The following table shows the number of persons in the Patent Office at various ages on November 30, 1912, and the number at each age and above.

While this table shows that there are a number of employees in the office at the advanced ages, it shows also that the problem of superannuation is not a serious one. Among the 910 employees given in the table there are but 22 who are 70 years of age or older, or 2.42 per cent of the total number. Compared with many other offices in the service, the percentage of aged people in the Patent Office is low.

Table showing by ages the number of employees in the United States Patent Office, as of November 30, 1911.

Age.	Number at age.	Number at age and older.	Age.	Number at age.	Number at age and older.	Age.	Number at age.	Number at age and older.	Age.	Number at age.	Number at age and older.
87.....	1	1	63.....	6	72	47.....	16	266	31.....	20	574
83.....	1	2	62.....	5	77	46.....	13	279	30.....	20	594
78.....	1	3	61.....	6	83	45.....	20	299	29.....	27	621
77.....	2	5	60.....	6	89	44.....	15	314	28.....	21	642
76.....	1	6	59.....	6	95	43.....	18	332	27.....	25	667
75.....	1	7	58.....	13	108	42.....	21	353	26.....	34	701
73.....	2	9	57.....	14	122	41.....	11	364	25.....	28	729
72.....	2	11	56.....	9	131	40.....	25	389	24.....	29	758
71.....	4	15	55.....	5	136	39.....	16	405	23.....	23	781
70.....	7	22	54.....	8	144	38.....	16	421	22.....	18	799
69.....	7	29	53.....	17	161	37.....	23	444	21.....	25	824
68.....	3	32	52.....	15	176	36.....	19	463	20.....	16	840
67.....	10	42	51.....	23	199	35.....	26	489	19.....	28	868
66.....	5	47	50.....	12	211	34.....	22	511	18.....	20	888
65.....	11	58	49.....	17	228	33.....	15	526	17.....	17	905
64.....	8	66	48.....	22	250	32.....	28	554	16.....	5	910

PROPOSED ORGANIZATION AND COMPENSATION.

The following table shows the number of officers and employees at the various grades, their rates of compensation and their total salaries under the present appropriations, and the number and compensation of the force proposed by the Commissioner of Patents in his estimates for the fiscal year 1914, and the force and salaries proposed by the commission:

Force of the Patent Office.

Position.	Appropriation for fiscal year 1913.			Estimate for 1914, as submitted by Commissioner of Patents.			Proposed force and salaries.		
	No.	Salary.	Total.	No.	Salary.	Total.	No.	Salary.	Total.
Commissioner of Patents	1	$5,000	$5,000	1	$5,000	$5,000	1	$7,500	$7,500
First assistant commissioner	1	4,500	4,500	1	5,000	5,000	1	5,000	5,000
Assistant commissioner	1	3,500	3,500	1	4,500	4,500	....	.....	.....
Chief clerk	1	3,000	3,000	1	3,000	3,000	1	3,600	3,600
Law examiners	2	2,750	5,500	3	2,750	8,250	....	.....	.....
Law clerks	....	.....	.....	....	.....	.....	2	2,500	5,000
Examiners in chief	3	3,500	10,500	3	3,500	10,500	5	4,500	22,500
Supervising examiners	....	.....	.....	....	.....	.....	7	4,000	28,000
Examiner of interferences	1	2,700	2,700	2	2,700	5,400	2	3,600	7,200
Examiners of trade-marks and designs	1	2,700	2,700	1	2,700	2,700	1	3,600	3,600
Examiner of trade-marks and designs, assistant	....	.....	.....	1	2,400	2,400	1	2,700	2,700
Assistant examiners of trade-marks and designs	6	1,500	9,000	6	1,500	9,000	8	1,500	12,000
Examiner of classification	1	3,600	3,600	1	3,600	3,600	1	4,000	4,000
Examiner of classification, assistant	....	.....	.....	....	.....	.....	1	3,000	3,000
Principal examiners	43	2,700	116,100	43	2,700	116,100	43	3,600	154,800
First assistant examiners	63	2,400	151,200	70	2,400	168,000	90	2,700	243,000
Second assistant examiners	73	2,100	153,300	75	2,100	157,500	90	2,250	202,500
Third assistant examiners	88	1,800	158,400	100	1,800	180,000	94	1,800	169,200
Fourth assistant examiners	110	1,500	165,000	110	1,500	165,000	83	1,500	124,500
Financial clerk	1	2,250	2,250	1	2,250	2,250	1	2,500	2,500
Librarian	1	2,000	2,000	1	2,700	2,700	1	2,700	2,700
Librarian	....	.....	.....	1	2,000	2,000	....	.....	.....
Chiefs of division	6	2,000	12,000	6	2,000	12,000	6	2,000	12,000
Assistant chiefs of division	3	1,800	5,400	3	1,800	5,400	3	1,800	5,400
Private secretary	1	1,800	1,800	1	1,800	1,800	1	1,800	1,800
Confidential clerk	....	.....	.....	1	1,600	1,600	....	.....	.....
Translator of languages	1	1,800	1,800	1	1,800	1,800	1	1,800	1,800
Clerks (class 4)	9	1,800	16,200	10	1,800	18,000	9	1,800	16,200
Clerks (class 3)	9	1,600	14,400	10	1,600	16,000	9	1,600	14,400
Clerks (class 2)	17	1,400	23,800	30	1,400	42,000	30	1,400	42,000
Clerks (class 1)	130	1,200	156,000	150	1,200	180,000	150	1,200	180,000
Skilled draftsmen	3	1,200	3,600	3	1,200	3,600	3	1,200	3,600
Draftsmen	4	1,000	4,000	4	1,000	4,000	4	1,000	4,000
Clerks	90	1,000	90,000	100	1,000	100,000	100	1,000	100,000
Messenger and property clerk	1	1,000	1,000	1	1,000	1,000	1	1,000	1,000
Copyists	90	900	81,000	100	900	90,000	107	900	96,300
Copyists	50	720	36,000	....	.....	.....	....	.....	.....
Minor clerks in lieu of copyists	....	.....	.....	25	720	18,000	....	.....	.....
Messengers	4	840	3,360	8	840	6,720	4	840	3,360
Assistant messengers	25	720	18,000	15	720	10,800	25	720	18,000
Laborers	14	600	8,400	20	600	12,000	14	600	8,400
Laborers	45	480	21,600	....	.....	.....	....	.....	.....
Examiners' aids	....	.....	.....	45	480	21,600	45	480	21,600
Messenger boys	40	360	14,400	....	.....	.....	30	480	14,400
Copy pullers	....	.....	.....	25	480	12,000	....	.....	.....
Total	939	.....	1,311,010	980	.....	1,410,720	975	.....	1,547,560

CHAPTER 8.

BUILDING ACCOMMODATIONS AND OFFICE EQUIPMENT.

BUILDING ACCOMMODATIONS.

In July, 1800, the Department of State, up to that time located in Philadelphia, was removed to Washington, together with the records, files, furniture, etc., thereof. The Patent Office, being a branch of this department at that time, was included, with its records, etc., in the moving. There was no building immediately ready to receive them, but during the following month the Patent Office, along with the other services of the Department of State, found office space in what was known as the "Seven Buildings," located at Pennsylvania Avenue and Twenty-first Street.

In 1810 Congress authorized "the purchase of a building for the accommodation of the General Post Office and of the office of the keeper of the patents." The building purchased was known as Blodgett's Hotel and stood on the site now occupied by the south front of the General Land Office Building. Into the east end of this building were moved the records, models, etc., of the Patent Office.

On December 15, 1836, a fire destroyed the building in which the Patent Office was and all the models and records and the library, with the exception of one book. The whole number of patents granted from July 31, 1790, the date of the first patent, to December 15, 1836, the time of the fire, was approximately 10,000.

By the act of March 3, 1837, every provision was made to restore the specifications, drawings, and models by obtaining duplicates of them from the persons in whose possession the originals were. An appropriation of $100,000 was made for this purpose. The whole number of models destroyed was about 7,000 and the records destroyed covered about 10,000 inventions. It was not until 1849 that the work of restoration was discontinued, and out of the amount allowed for the purpose $88,237.32 was expended.

CONSTRUCTION OF PRESENT PATENT OFFICE BUILDING.

On June 15, 1836, previous to the destruction in December of that year of the building occupied by the Patent Office, a bill was reported "providing for the construction of a building for the accommodation

of the Patent Office." The bill as amended became a law July 4, 1836. In that month the erection of the building began. This is the present south front of the Patent Office, excluding the south ends of the east and west wings. The building was 270 feet long and 69 feet wide. The basement (what is now the first or ground floor), was to be used for storage, fuel, furnaces, etc., the first or portico floor for office rooms, and the second floor was to be one large hall, with galleries on either side, and to have a vaulted roof. This hall was designed to be used as a national gallery of the industrial arts and manufactures and for the exhibition of models of patented and unpatented inventions. The body of the building is of Virginia sandstone and was afterwards painted white.

After the destruction of the old building in December, 1836, and during the erection of the new building authorized in July of that year, the Commissioner of Patents found temporary quarters in the City Hall. In the spring of 1840 the building was completed and the Patent Office moved into its own home, upon the construction of which the sum of $422,011.65 had been expended.

By the act of March 3, 1849, establishing the Interior Department, the Patent Office was attached thereto. This same act appropriated $50,000 out of the "patent fund" to begin the east or Seventh Street wing of the Patent Office Building. This wing was completed in 1853 and cost $600,000, of which amount $250,000 was taken from the revenues of the office. As soon as the wing was ready for occupancy the Interior Department took possession.

By an act approved August 31, 1852, there was appropriated $150,000 to begin the erection of the west or Ninth Street wing of the building. Plans for the entire building as it now stands were prepared in this year. The west wing was completed and occupied in 1856 and cost $750,000. In the same year work was begun upon the north or G Street wing. In 1867 this wing of the office was finished at a cost of $575,000. Thus it is seen the entire cost for the building was $2,347,011.65.

The law of 1870 provided that a model was not to be furnished unless the commissioner required it. This change was made because there was not sufficient room in the model halls to classify and arrange the models, and because of the further fact that it was the general opinion they were unnecessary.

On September 24, 1877, the roof and model rooms and contents in the west and north wings of the building were destroyed by fire and much damage done to the building. About 87,000 models and 600,000 photolithographic copies of drawings were ruined by fire and water. Up to the time of this fire there had been spent in the construction of the Patent Office Building, its repairs, furnishings, etc., nearly $3,000,000.

Previous to the occurrence of the fire the Patent Office Building had been looked upon as a fireproof structure. The following statement is quoted from a report made relative to that portion of the burned structure, early after the fire:

The roof was what is commonly known as a "truss roof." The tie-rods, rafters, braces, and struts were of iron. The purlines, trusses, sheathing, and ceiling were constructed of pine wood. The pine sheathing of the roof was covered with sheet copper about one-fortieth of an inch in thickness. The chimney tops were of iron, set over the flues upon the brick wall, about 12 inches below the roof, and they extended above the roof about 2½ feet. Over the gutters, running around the entire wing, was placed a pine grating, to keep them from clogging up in the winter and to protect them from the heat of the sun in the summer. This grating was made of inch boards, fastened together by crosspieces of 2 by 3 inch scantling, and it was constructed in sections 4 feet in width by 10 feet in length.

DESCRIPTION OF THE PRESENT BUILDING.

The location of the present Patent Office Building is in the double block bounded on the south by F Street, on the east by Seventh Street, on the north by G Street, and on the west by Ninth Street; measuring on the north and south fronts about 402 feet and on the east and west fronts about 274 feet. The construction of the building is of Virginia sandstone, and consists of four main floors, the top floor being subdivided into a main floor, above which are constructed, on the north, west, and south sides, two balconies. The floors of the building were originally designated as sub-basement, basement, first floor, and second floor. This has since been changed, and they are now known as basement, first floor, second floor, third floor, and balconies. The basement as now designated is constructed with entrances on the north and west sides, these being the only sides of the basement floor above ground. The inside or court rooms are one floor below the ground, adjoining which, however, excavations have been made to a width of about 5 or 6 feet. This excavation reaches from the level of the basement floor to the level of the first floor, and through this excavation or opening the natural light and ventilation which reaches the court rooms of the basement floor enters. The ground of this court is on a level with the first floor, and is plotted in grass, shrubbery, and trees, giving a general park effect, being subdivided into beds or sections by paved walks. The inside dimensions of the building adjoining the court are approximately as follows: North and south sides, 265 feet; east and west sides, 105 feet.

The commission's attention has been called to a suggestion made in the past relative to the construction within this court, for the purpose of acquiring additional office space, of a building of approximately the same height as the present Patent Office Building. The commission believes that the additional room space gained thereby would not only be undesirable, due to lack of proper ventilation and

light, but at the same time such construction would make even more undesirable the court rooms of the present building, removing therefrom in a very large degree the natural light and ventilation now coming through this court. Such interior construction would also affect the ventilation of the corridors and to a greater or less degree the outside rooms of the building.

The present building having been completed in 1867, the newest wing is now 45 years old; and while the building no doubt was adapted to the use to which it was put at the time of construction and to the force of employees and records that were to be accommodated, it is unsuited to the present needs of the Patent Office in almost every particular, but especially for the peculiar needs of a modern Patent Office.

DISTRIBUTION OF SPACE IN BUILDING.

Of the entire floor space of the Patent Office Building, 78.45 per cent is used by the Patent Office, while 21.55 per cent is used as the offices of the Secretary of the Interior. Considering the floor space of the rooms alone, 18.35 per cent is used as the offices of the Secretary of the Interior.

As the rooms in the basement occupied by the Secretary's force are mainly used as shop rooms, engine rooms, etc., which use must necessarily continue if the entire building were turned over to the Patent Office, the additional room which would be obtained if the entire building were used by the Patent Office would be insufficient, except for a short period only, for the pressing needs of the office, and even during such a period desirable conditions would not obtain. A building arranged to suit the special requirements of Patent Office work is a necessity.

The following table gives the floor space and cubical contents of the building, and the division between the Patent Office and the Interior Department proper:

Square feet of floor space in building.

Floor.	Total for building.	Patent Office.					Interior Department.		
		Total.	Rooms.		Total for rooms.	Corridors.	Total.	Rooms.	Corridors.
			Examiners.	Other.					
Basement...	42,289	14,370	3,189	5,704	8,893	5,477	27,919	18,106	9,813
First.....	59,315	47,435	22,665	8,843	31,508	15,927	11,880	6,625	5,255
Second.....	58,211	36,329	14,513	10,649	25,162	11,167	21,882	14,711	7,171
Third.....	64,373	64,373	17,749	30,120	47,869	16,504	.....	.....	.....
Galleries.....	62,071	62,071	.....	62,071	62,071	.....	.....	.....	.....
Total..	286,259	224,578	58,116	117,387	175,503	49,075	61,681	39,442	22,239

Capacity of building in cubic feet.

Floor.	Total for building.	Patent Office.					Interior Department.[1]		
		Total.	Rooms.		Total for rooms.	Corridors.	Total.	Rooms.	Corridors.
			Examiners.	Other.					
Basement...	468,593	159,230	35,599	63,384	98,983	60,247	309,363	200,628	108,735
First.....	736,545	601,736	263,735	95,194	358,929	242,807	154,809	86,331	68,478
Second.....	870,327	543,164	214,350	163,276	377,626	165,538	327,163	219,948	107,215
Third.....	2,301,425	2,301,425	211,268	338,061	549,329	1,752,096	.....	.....	.....
Galleries[2]....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total..	4,396,890	3,605,555	724,952	659,915	1,384,867	2,220,688	791,335	506,907	284,428

[1] Figures estimated on basis of floor space.

[2] Included in figures for third floor.

An examination of this table, in connection with the number of occupants, the filing cabinets, office furniture, and the nature of the service performed, gives a fair idea of the crowded condition of the office. As shown by this table, the total gross air space of the rooms occupied by examiners' offices is 724,952 cubic feet. In the examining rooms are 45,204 cubic feet of filing cases and 23,975 cubic feet of desks, chairs, etc. Deducting the total of these amounts, 69,179, from the gross cubic contents of the rooms, there remains 655,773 cubic feet as the net available air space. There are 485 persons regularly employed in the examining divisions, of whom 395 are examiners and 90 are clerks and messengers. On the basis of these figures but 1,350 cubic feet of air space is provided for each person employed in the examining rooms. It is noted that in these figures no consideration has been given to the large number of attorneys and others who are frequently in the examining rooms. If the number of these persons were taken into consideration in making the estimate of air space it would probably bring the average somewhat below 1,000 cubic feet per capita. These figures show that the amount of breathing space allowed to employees is most inadequate under the present system of ventilation.

The rooms of the examining divisions average in size about 20 by 21 feet, with ceilings between 11 and 12 feet high. In each of these rooms an average of not less than four examiners is employed. When it is considered that the space consumed in these rooms by filing equipment and furniture is from three to five or more times that found in most offices, and that space therein must be frequently provided for examiners to have consultations with attorneys practicing before the office, the impossibility of conducting the business of the office in the most efficient manner is evident.

The conditions obtaining throughout the clerical divisions are less desirable than those in the examining divisions. After deducting the estimated space taken by furniture, etc., the net amount of available air space in the clerical divisions is less than 408,736 cubic feet. In these divisions 429 persons are employed regularly, thus allowing about 953 cubic feet of air space to a person, or considerably less than there should be under the present system of ventilating. These figures show that an average of at least six persons are housed in a room of the average size of that given in the description of the rooms in the examining divisions.

The foregoing figures relative to the number of persons employed in the clerical divisions do not take into consideration 22 messengers or boys employed in the Publication Division in the service of withdrawing and handling sale copies of patents.

PRESENT CONDITION OF THE INTERIOR OF THE PATENT OFFICE BUILDING.

The entrances to the Patent Office more frequently used by those having regular business with the office are from Ninth Street, either near F or G Streets, by way of the ground floor, commonly known as the basement. These entrances are so largely used because of the fact that the elevator to the upper floors of that part of the building occupied by the Patent Office starts from the basement.

It was thought in designing this building that the basement would be used exclusively as a storeroom. To a very limited extent this original idea is being carried out, though to a very much greater extent it is being used for accommodating persons engaged in current work, including examiners, and for shelves for filing or storing publications which are being called for every hour of the day, and other purposes equally as active.

As one enters these ground-floor corridors from the street, the conditions of entire absence of natural light and fresh air, combined with the surroundings of dust-laden shelves, are clearly impressed upon him.

That portion of the building occupied principally by the Patent Office proper is equipped with one elevator of an old style, inefficient, and not adequate for carrying the many visitors as well as employees of the office. To a considerable extent the stairway must be used.

BASEMENT.

The basement floor of that portion of the building allotted to the Patent Office, as previously stated, is occupied in part for storeroom purposes, though to a very much greater extent for filing publications, frequently called for, working rooms, and offices of examiners,

office of the clerks in charge of models, etc. Due to the absence of proper ventilation and fresh air, combined with the fact that the only entrances to these corridors are directly off the street, from which persons entering the building bring in more or less dirt, the condition of this basement is very undesirable for use as offices. Dirt conveyed from the streets is deposited on the floors of the corridors—which are constructed of "flagstones" between which are large cracks—and is later stirred up by the passing public. Finding no other outlet, it lands on and in the publications stored in shelves alongside these corridors, and in the rooms adjacent thereto. The cases in which publications are contained (the publications consisting solely of "sale" copies of patents) are open both in front and rear, thus allowing dust to accumulate.

Some of the contents of these shelves are referred to and taken out continually throughout the day by messenger boys employed by the Publication Division of the office. The handling of these publications stirs up the dust and other matter which has accumulated thereon and a large portion of that which has not already been ground into the publications, making them undesirable for sale, settles on the clothes and bodies of the boys handling them. Much of this dirt seeps into the working rooms of the examiners adjoining these files.

As a result of these conditions it has been stated that the boys employed in this service are developing from time to time diseases of the throat, nose, and eyes.

FIRST FLOOR.

That portion of the first floor of the building occupied by the Patent Office is used principally by examiners and the clerical forces of the Issue and Gazette Division. In other space, including the corridors, where it is possible to squeeze in shelving for the filing of copies of patents, such copies are filed. Many of the sale copies on this floor are somewhat better than those in the basement, due to the fact that the cases in which they are stored are better constructed, the rear of the cases being boarded up and the front of the cases provided with swinging doors. These doors, in most instances, however, do not fit properly, thus allowing foreign matter to be deposited upon the copies. Because of the fact that this floor is somewhat farther removed from the streets, less dust reaches this or the upper floors than the basement.

At this point attention is called to the fact that it has often been stated that the corner of Ninth and F Streets is the busiest corner in the city of Washington, and from observation it would appear that this statement is correct. The building is the only public building in Washington that has a double line of street cars on all the four

streets on which it abuts, not to mention the other heavy traffic in these streets. Such a condition is certainly not the most favorable one for doing the class of work required of this office.

SECOND FLOOR.

On the second floor of the building, conditions are less undesirable. The rooms on this floor are occupied principally by examiners and various clerical services of the office, including the Mail Division, the Drafting Division, the office of the financial clerk, the office of the docket clerk, the application room, etc. On this floor are located the office of the Commissioner of Patents and his assistants as well as the office of the chief clerk of the Patent Office.

On this as well as other floors of that portion of the building occupied by the Patent Office, the ends of the various corridors have been partitioned off and converted into rooms for office purposes. These made rooms, while affording some small addition to the floor space, are anything but desirable. A room of this type is occupied by one of the examiners in chief, and another by the assistant commissioner.

THIRD FLOOR.

Like the other floors of the building, the third floor is occupied largely by the offices of examiners and the clerical forces. In the west wing of the building is located the public search room and the library of the Patent Office.

Of the clerical forces, the Assignment Division, the Publication Division, and the Manuscript and Photolithographic Division occupy a large portion of the north wing, in which many of the most undesirable conditions of the building exist. The ceiling of the working rooms of this portion of the floor is but 8 feet 4 inches high. Above this ceiling are two galleries originally constructed for the purpose of exhibiting models. In these galleries are stored, among other things, copies of patents kept for sale, original drawings, single copies of issued patents, and numerous noncurrent record books, letter files, etc.

Referring to the rooms located on the third floor immediately below these galleries, the following statement is made:

> The percentage of clerical efficiency in this division is greatly decreased by conditions over which the clerks have no control. These conditions may be divided into three general heads, viz, lack of proper light, lack of floor space, and lack of cleanliness and ventilation.
>
> The rooms are under a large portico and shaded by immense columns which shut out all direct light. The galleries in which the messenger boys work have practically no outside light, and they work by the aid of small incandescent burners at all times. The clerks work by the aid of artificial light at least 60 per cent of the time.
>
> Thirty-four of the clerks are huddled in three small rooms, about 25 by 20 feet each, with ceilings only 8 feet 4 inches high. The desks and chairs cover almost all of the

floor space, and it is utterly impossible for one clerk to speak with another relative to the work without disturbing every clerk in the room. * * *

There can be no system of ventilation in these rooms because of their crowded condition. Four clerks sit right against the windows in each room, and it is unfair to them to keep the windows open, yet the other clerks suffer for want of fresh air. In order to make the conditions bearable it is necessary to discontinue all work at stated intervals of time, open the windows, and change the air.

In the foregoing statement of conditions in this wing of the third floor there is no exaggeration of the undesirable conditions that exist.

In another portion of this wing of the same floor, where conditions are similar to those described, 17 typewriter operators are employed in a room having a floor space of about 20 by 40 feet, the ceiling height of this floor being 8 feet 4 inches, as heretofore mentioned. The cubical contents of this room occupied by these 17 employees is, therefore, 6,666 feet, or equivalent to 392 cubic feet per employee. Based upon the results of scientific observations as to air space requirements and with due regard to the necessity for ordinary ventilation, the space herein allowed is wholly inadequate, and conditions are really almost unbearable when the exceedingly bad conditions of ventilation are considered. The statement relative to cubical contents of this room, as will be noted, does not exclude the space occupied by filing cabinets, desks, etc., used in connection with the work performed; considering the space so occupied conditions are more undesirable than would at first appear.

Conditions as to dust, lack of ventilation, and other things as undesirable, exist in the galleries above the third floor as they do in other portions of the building. Because of the fact that these galleries are immediately beneath the roof with no ventilation of any kind, the conditions therein during the summer months are almost unbearable. The messenger boys employed therein to withdraw copies wear the standard type athletic clothing of the thinnest practical material.

The statements which have been made relative to the galleries of the north wing apply, in a general way, equally to those of the west and south wings.

SOME DETAILED DESCRIPTIONS.

The foregoing statements as to conditions in the Patent Office deal more or less with generalities. They do not take up, except in a few instances, the inadequacy of the available filing space, the various purposes for which files are required, the lack of proper working space, the cumbersome, insanitary, and otherwise undesirable desks and other equipment employed in practically all the rooms of the office.

While it may be unnecessary that these matters be taken up in detail in so far as they apply to each division or room of the office, some additional descriptions may be used as illustrating the rooms as a whole.

OFFICE OF THE DOCKET CLERK.

The equipment of the rooms of the docket clerk consists of 10 desks (all old and insanitary); 1 old-fashioned copying outfit; press and bath pen; 2 typewriters; 1 book typewriter; all typewriting machines in fair condition; 1 old-fashioned typewriter desk, fair condition; 4 typewriter tables (old); 23 chairs, some in fair condition, some bad (2 typewriter chairs); 2 wardrobes used for filing purposes (old and inadequate); 1 standing desk with top compartments for 24 large volumes of record books; 1 standing desk for docket records (in fair condition); 3 sets of compartment shelves for back-date record books and decisions (fair condition); 12 large wall cases with pigeonholes for files of wrappers (inadequate, open, and insanitary); 1 dictionary stand (fair condition); 2 mirrors; 1 clock; and 7 wastebaskets.

The room used by the docket clerk is entirely too small for the proper handling of the large amount of business transacted, and the space for his work is much smaller when it is considered that over a third of it is allotted to attorneys and their clerks, requiring four large tables and many chairs.

There are several hundred bundles of terminated interferences, containing from 5 to 50 interference files, now occupying the only available floor space in the room. These bundles must be either walked on or removed in order to get at records on the shelving behind them.

There are approximately 400 pasteboard boxes varying in size, in which are filed terminated interferences. These boxes are easily broken and crushed and would, in case of fire, be quickly destroyed. As these pigeonholes are all open, the dust and dirt accumulate in such quantities that the rooms are insanitary and the records are more likely to suffer injury.

THE SCIENTIFIC LIBRARY.

In the scientific library the equipment is sadly lacking in quantity, quality, and condition. The steel book shelves, of which there are approximately 25,000 feet, are in good condition, but do not afford sufficient accommodation for the books (including bound volumes of periodicals and patents); there is, however, available an appropriation of $2,500 with which to purchase additional bookshelves, which it is estimated will provide space for about two years' increase. There

are many old and valuable catalogues in this library, but at the present time cases are not provided in which to properly place or search them.

The reading tables, six in number, are usually insufficient to accommodate searchers in the library, and for their convenience two more are necessary, although the already crowded condition of the reading room allows no space not otherwise occupied. Two more library trucks for moving books are needed. Of the 15 filing cabinets, only 6 may be classed as modern, and these are nearly filled.

The unbound copies of patents are kept in about 2,000 cardboard boxes, a large number of which boxes are dilapidated and unfit for use. The desks and chairs, while not new, are in serviceable condition. The lighting facilities are especially poor, as are also the facilities for keeping the library clean.

THE ASSIGNMENT DIVISION.

The equipment of the Assignment Division, and especially the furniture of all kinds, is antiquated and dilapidated, there being no new furniture of any kind therein.

From 1837 to date deeds, transfers, assignments, licenses, and other papers affecting the title to patents have been recorded in the Patent Office, and there are now being recorded about 30,000 each year. These records are transcribed from the original instrument into books designated "Transfers of patents," and during that period over 2,360 of these volumes, each containing 500 pages, have been filled and about 75 more are added each year. Each book is 14½ inches in length, 12 inches in width, and about 2 inches in thickness, thus necessitating considerable space in which to store same. In addition to these records there are at present 455 "Digests of assignments," in which all of the recorded deeds are briefed and indexed under the name of the inventor of each of the inventions affected thereby, so as to facilitate searches to ascertain ownership, and about 10 such record books are added each year. No provision has been made for the preservation of these records other than storing them on wooden shelves in this division or in the gallery above, and if a fire should occur in the vicinity of these books it is believed that nothing could be done to save them, as their removal would be impracticable owing to the great number.

As there have been two serious fires in the Patent Office, in one of which all of the original records were destroyed, it seems most desirable that some method for the better protecton of these and other records be provided at the earliest practicable date, as the ownership of patents, designs, trade-marks, prints, labels, and applications are involved in these records. If destroyed by fire or otherwise,

the record of ownership of the patent property of the whole country would be lost, causing irreparable injury to many inventors, assignees, and manufacturers.

COMMENT AS TO FIRE RISK.

While these statements relative to possible loss by fire apply to the Patent Office as a whole, they are especially applicable to the assignment records.

In this connection are given two articles published in 1911, the second quoting a report of the fire marshal of the District of Columbia, upon the hazardous conditions existing practically throughout the Patent Office Building. The first article is as follows:

Every large fire teaches its lesson, and a burning like that of the Albany capitol wherein public records are destroyed brings home to those interested in similar records a warning that should not be disregarded. The recorded transfers of interests under patents in the United States Patent Office are probably the only record evidence of the titles to millions of dollars invested in patent rights. It is well to recall how these evidences of title are safeguarded against fire. These records include nearly 2,250 record volumes, each containing 500 pages and each book is 14½ inches long, 12 inches wide, and about 2 inches thick. It does not require calculation to demonstrate that considerable space is required for their storage. In addition to these record books there are about 436 digests of assignments, in which all the recorded deeds are briefed and indexed. Now, these books are of great value to all interested in the property interest secured by patent rights, and no provision whatever is made for protecting them against fire. They are stored on wooden shelves in a hall which was "gutted" by the Patent Office fire of 1877, and in the event of a similar fire it is feared the books would be destroyed, as their great number would render their removal impracticable. This condition of affairs is doubtless deplored by the Commissioner of Patents and his subordinates more than by anyone else, because they appreciate the importance of the records and their liability to destruction. It has been suggested that that section of the old model hall be made into a vault fireproofed according to modern methods and furnished with metallic shelving of capacity to hold not only the volumes now on hand, but those which will accumulate in the years to come. It is hoped that this or some similar fireproof storage space may be provided for these most valuable records.

The second article follows:

The necessity of fireproof storage facilities for the assignment records of the United States Patent Office was called to attention in our issue of May 27. The fire marshal, P. W. Nicholson, of the District of Columbia, has just submitted to the District Commissioners an extended report on the hazardous conditions existing practically throughout the Patent Office Building. As to the general conditions in the Patent Office the fire marshal has this to say:

"The worst conditions are on the third floor, Ninth Street wing. The entire floor and corridors are taken up with combustible matter, wood shelving filled with official documents. The corridor is used by the public in the examination of records, and the position of the clerical forces is obstructed by desks and tables.

"There are two balconies extending from the floor to the ceiling filled with wood shelving, in which are stored official documents, with small aisles hardly wide enough for one person to pass. The conditions are much congested. In the event of a fire the fire department would be much hampered by the obstructions from the corridors,

besides encountering a regular wall of fire. The stairways are hidden from view by the wood shelving and are not properly located. There are two wire gates in this corridor separating two different bureaus that are kept locked at night. This should not be allowed."

In this connection attention should be called to the fact that while the Patent Office Building is supplied with watchmen for both day and night service, it is believed that the service could be improved by the installation of a system of watchmen's clocks with key stations distributed throughout the building to require the watchmen to visit, at stated periods, practically every room and corridor of the building. The only plan in use at present to indicate that watchmen are on duty is a push button located at their desks. These buttons are connected electrically with the main watch station to which each watchman reports periodically to indicate that he is at his post.

THE MANUSCRIPT AND PHOTOLITHOGRAPHIC DIVISION.

The Manuscript and Photolithographic Division comprises five sections; that is, (1) photolithographic, (2) manuscript, (3) attorneys' and record room, (4) abandoned and forfeited files, (5) assembling and stitching room.

The first two sections (the photolithographic and manuscript) occupy space in the north wing on the third floor, which was formerly used as a model hall, the ceiling being about 8 feet 4 inches high, over a floor space of 3,111 square feet. This section is divided into four rooms, three of which are not separated from the corridor by partitions, subjecting the employees to the diverting influence of those persons visiting the Assignment Division located on the opposite side of the hallway a few feet distant. The inadequacy of space in these two sections necessitates the placing of desks and other necessary equipment in such close proximity to one another as to be a continual source of annoyance to the clerks and materially hinders the progress of the work. This congestion, together with the lowness of the ceiling, makes proper ventilation and light impossible. In this section of the office is the desk of the chief of division.

The third section (the attorneys' and record room) is located on the same floor, but in the southwest corner of the building, some distance from the above-mentioned sections. The resulting travel between the two points entails much loss of time. The room occupied by this section is crowded and inadequate for the increasing business, the shelf space for bound volumes being about all consumed, and the desk room for the attorneys is not sufficient to accommodate all.

The fifth section (the assembling and stitching room) is situated on the south corridor of the first floor, and the nature of the work carried on is such as to require considerable travel between this and the other parts of the division located on the third floor.

In view of the isolated positions of the various sections of this division with respect to each other and the loss of time in traveling between them, it is obvious that a consolidation would greatly expedite the business of the division.

The office equipment of this division is far from being modern, a great deal of the filing furniture being nothing but board shelving built by the department carpenters for the purpose of filing or storing these more or less valuable records of the office. Most of the furniture now in use in this division is antiquated and insanitary.

Under present conditions, in order to walk to and from the nearest toilet, for either male or female, a walk of several city blocks is required.

THE PUBLICATION DIVISION.

In addition to what has been said heretofore about conditions surrounding the Publication Division the following is added:

The records, including the only authentic lists of the 15,000 subclasses constituting the office classification, are stored herein in old pasteboard boxes, many of which are dropping to pieces and exposing such records to loss or destruction.

There are approximately 50,000,000 printed copies of patents in stock, and they are stored in old wooden racks, located on practically every balcony and floor in the building. About 10,000 to 11,000 copies are dispensed daily, and the copies of each patent must be easily accessible to avoid delay in filling urgent orders. The present condition of these copies is deplorable, and it is practically impossible to fill the current orders with any degree of satisfaction. This condition was brought on by the constant shifting of the copies from place to place in order to find space for them, irrespective of numerical arrangement. An addition of 12 linear feet of cases, 9 feet high and 1 foot deep, is required each week. The present available space, including corridors, galleries, etc., will last less than one year.

In this division 40 clerks are employed on clerical work in four small rooms containing a total of 2,369 square feet with a ceiling only 8 feet 4 inches high. In other words, each clerk has 59 square feet or 494 cubic feet of space, including space occupied by furniture, etc.

No direct natural light enters three of these rooms, owing to the obstruction caused by the pillars in front of the windows.

CONDITIONS IN EXAMINING DIVISIONS.

The foregoing statements relative to the housing of employees, as well as the general working conditions of the clerical divisions, are more or less illustrative of like conditions in the examining divisions of the office. Due to the fact that these divisions engage the services of higher salaried employees, it may be more necessary from a financial viewpoint that consideration be given to these divisions than to

those engaged in clerical or routine work exclusively. From a humanitarian viewpoint as well as the attainment of the highest state of efficiency all divisions of the office, both clerical and technical, should be given full and equal consideration.

In order that a comprehensive idea may be had of the housing conditions of some of the technical divisions of the Patent Office, a description of the accommodations afforded a few of the examining divisions and the Classification Division is here given.

The Classification Division, which is the largest of the technical divisions, is housed in four rooms containing floor space as follows:

	Square feet.
Room No. 349	1,313
Room No. 350	1,534
Room No. 346	674
Room No. 344	968
Total	4,489

Of the 1,313 square feet contained in room 349, 362 square feet, or over 27 per cent, is occupied by equipment, leaving 950 square feet for the personnel, consisting of 12 assistant examiners. In addition to the assistant examiners, attorneys and their employees in varying numbers have to be accommodated, since the copies of patents used in classification are taken from the public search room. It is not uncommon to find as many of these persons present as assistant examiners. This room has a height of but 8 feet 4 inches, so that the volume is 10,941 cubic feet. The space taken up by the equipment is equivalent to 1,179 cubic feet, or about 11 per cent of the air space. When there are only the regular occupants in the room—that is, 12 assistant examiners—this gives an air space of 813.5 cubic feet for each person, an amount considerably diminished when attorneys and others are present.

Of the total of 1,534 square feet contained in room No. 350, 480.9 square feet, or 31.3 per cent, is occupied by equipment, leaving 1,053 square feet for the personnel, consisting of 13 persons—that is, 12 assistant examiners and 1 clerk. In this room also the public, patent attorneys, and their employees have to be accommodated, and at times the number of such additional persons equals or exceeds that of the personnel. The height of the room is 8 feet 4 inches so that the volume is 12,783 cubic feet. Of this air space, 1,684 cubic feet, or over 13 per cent, are occupied by equipment, leaving 11,099 cubic feet for 13 regular occupants, or 854 cubic feet per each person, an amount considerably diminished at times when attorneys and others enter.

Of the total of 674 square feet in room 346, 172 square feet, or over 25 per cent, are occupied by equipment, leaving 501 square feet for the personnel, consisting of five persons—that is, the chief of the division,

two clerks, a stenographer, and a messenger. This room also accommodates the public, attorneys, and their employees, as well as examiners and assistant examiners from various divisions of the Patent Office. This room has a height of 8 feet 4 inches, and its volume is 5,416 cubic feet. The space taken up by the equipment is 543 cubic feet, or 10 per cent of the whole, thus leaving 974 cubic feet for each person. This amount, too, is materially diminished by the presence of attorneys and others. Of the 968 square feet in room No. 344, 374 square feet, or about 38 per cent, are occupied by equipment, leaving 594 square feet for the personnel, consisting of 12 persons—that is, four clerk copyists, four stenographers, three assistant messengers, and one skilled laborer. This room is 8 feet 4 inches in height and includes 8,066 cubic feet. The space taken up by equipment is 716 cubic feet, or 9 per cent. This leaves 7,350 cubic feet of air space for 12 persons or 612 cubic feet for each person. At times attorneys and their employees have occasion to search copies in this room.

The four rooms constituting the quarters of the Classification Division were originally a part of the model hall, which housed models for patents. By erecting wooden partitions these rooms, with a ceiling 8 feet high, were formed. In the three larger rooms there are a number of openings about 10 feet long by 3½ feet wide in the ceilings admitting light and air to the upper galleries, these openings in one of the rooms being closed by covers in winter.

The only means of ventilation is by opening the windows, which in inclement weather is productive of drafts, causing many to suffer from colds, and producing other undesirable results. The air space per capita is quite inadequate for the regular occupants, and this of course is made worse when the number of occupants is increased by outside visitors. The equipment of this division is for the most part old. The galleries overhead contain wooden cases in which copies of patents are stored, the sale of these copies being one of the activities of the Patent Office. Dust accumulates in these galleries and is stirred up when the copies are disturbed, a large part of it finding its way down into the rooms of the Classification Division through the openings previously mentioned. In the two larger rooms most of the wall space is utilized for the reception of cases with pigeonholes in which are placed copies of patents undergoing reclassification.

EXAMINING DIVISION NO. 21.

This division occupies rooms 104, 112, and 113, together with a large open space around the east elevator on the third floor. Nearly one-half of the floor space of these rooms is occupied by filing cabinets, desks, chairs, and other equipment and furniture.

Room No. 112 of this division, which contains about 125 square feet, is occupied by three and sometimes four persons. Due to the

fact that it is located on a corner facing two streets with windows opening on each, the crowded condition of this room does not result in as undesirable conditions as would be the case under other circumstances. The furniture in the room is not of the sanitary type, and occupies the larger part of the floor space.

Room No. 113, in which a part of this division is housed, is more or less typical of the average examiner's room of the Patent Office, although being an outside room it is somewhat better adapted to use. The floor of this room is in very bad condition, as are the floors of practically all other examiners' rooms of the office, and is without covering of any kind. Because of the bad condition of the floors of the Patent Office, any coverings which may be placed thereon wear out much more quickly than they would under proper conditions.

Room 104, in which four assistant examiners are employed, opens on an inside court and is separated 150 feet from the other rooms of the division. Like most of the other examiners' rooms of the Patent Office it is inadequately ventilated, contains insufficient natural light, and is overcrowded. Because of the fact that the room is considerably removed from the other working rooms of the division a large amount of time is used in traveling back and forth.

As the three rooms mentioned do not afford sufficient space for storing reference copies, it has been necessary to place a large quantity of drawings and specifications of foreign patents of various classes in the open space around the east elevator of the third floor. These copies of drawings and specifications are referred to continually, and to reach them a large amount of time is necessarily consumed. Aside from the time consumed in going to and from these files, the place which they occupy is very undesirable for the purpose, as it is not well lighted, and the space about the patent cabinets is made use of by the janitors for storing various trucks, buckets, mops, and cleaning brushes, which are very often in the way of the examiners, and usually have to be moved before a search of the files can be made.

The three rooms in which this division is housed contain about 1,200 square feet of floor space and approximately 14,000 cubic feet gross of space. Of this space, about 2,000 cubic feet is occupied by files, desks, and other furniture and equipment, leaving approximately 12,000 cubic feet. In these three rooms there are employed 12 persons, consisting of 9 examiners, 2 clerks, and 1 messenger. This gives an average of 1,000 cubic feet per person. While this average per person is considerably higher than that obtaining in other rooms before referred to, yet considering the conditions as they actually exist, it is evident that this space is not sufficient.

In this division, as in other examining divisions of the office, the various examiners have little or no privacy, so that when one is visited by anyone from within or without the building the conversa-

tion interferes more or less with the other occupants of the room, thereby causing a loss of time and decrease in efficiency of such employees.

EXAMINING DIVISION NO. 5.

Division No. 5, occupying rooms Nos. 165 and 167 in the west wing of the building, overlooking Ninth Street, from the viewpoint of location, etc., would be considered under ordinary circumstances among the more favorably situated offices. This space, which in fact is but one room made into two by partitions consisting of stacks of filing cases, contains 1,114 square feet of floor space, and approximately 12,250 cubic feet, of which fully 20 per cent is consumed by files, desks, etc. In this space 12 persons are employed. The floor of this room, like the floors of most other rooms of that portion of the building occupied by the Patent Office, are in a very undesirable condition, being uneven and splintered, and in many places containing holes or openings.

LIGHTING.

The natural lighting can not be improved in the building now occupied by the Patent Office. It is therefore necessary to resort to some means of artificial lighting. The amount of natural light obtained would be more effective if the tints of the walls were changed. At present the walls are colored with a dark and nonreflective tint, which serves to absorb the natural light received through the windows. If the ceilings and walls of these rooms were changed to a light-reflecting color, such as a light buff, the effectiveness of the natural light would be greatly increased. While some of the rooms are equipped with a proper lighting system, the majority of them are not. In many cases the rooms are inadequately lighted with the old carbon incandescent electric bulb. These bulbs do not give sufficient light for the work in the office and are hard on the eyes. The entire lighting system should be overhauled and a new system be installed. A proper system of lighting could be installed in the rooms to give a much better light than is given by the present service and with a more economical use of electricity. A proper system of wiring would materially reduce the present fire hazard from exposed and improper wiring. The necessity for proper lighting in the examining divisions can be shown by figures appearing in a report issued by the Society of Illuminating Engineers. The figures are given in units of "foot-candles," one unit representing the amount of light afforded by a candle, at 1 foot distance from the flame. The society states that in its experience the amount of light necessary for a person who is doing ordinary reading, writing, or work on white or light-colored material is the same as that afforded by two or three foot candles; for sewing on dark work

or reading fine type five candles are not too much, while for drafting, engraving, watchmaking, or working on black cloth and the like from seven to ten foot candles should be furnished. The examiners of the Patent Office are employed a large part of their time examining drawings, which taxes the eyes in the same manner as drafting work. It will be seen from the figures given that the amount of light necessary for this work is four to five times that required for ordinary office work.

VENTILATION.

The present natural ventilation of the Patent Office is insufficient for the number of employees therein. In many cases the air space allowed for employees is less than 300 cubic feet. The reason for this condition is the lack of office room and regular increases of force, the cumbersome equipment used by the clerks, and the closing up of the corridors at the ends. In some of the galleries in which boys are employed pulling copies, there is no ventilation whatever, either natural or artificial. In many cases there are so many clerks in one room it is necessary to have their desks against the window. This makes it impossible to open the window in the winter months. In some cases homemade ventilators have been installed by means of boarding up the bottom of the window and bringing the air through a wooden box in which an electric fan is installed. This is a great improvement over no system of mechanical ventilation whatever, but can hardly be recommended, as dust is sucked through the wooden box into the room. The present practice of closing up the ends of the corridors, which were originally intended for ventilation, should be discontinued and the present rooms in the corridors be removed in order that the corridors may be properly ventilated. The skylights in the galleries on the third floor should be altered so that it will be possible to open them and allow the air to enter. In the examining divisions, where it is impossible to properly ventilate the rooms because of the number of people employed, artificial ventilators should be used. These ventilators will give practically the same result as the homemade ventilators in use with the advantage of being less bulky and having a dust trap which removes the dust before it is drawn into the room. Outside of the humane features of such recommendations they can be considered on a money basis, as the loss of time from illness is decreased to such an extent that the saving more than pays for the cost of the necessary installation.

In order to give a specific instance in which this saving can be shown the experience of one division is given. The figures cover the experience during five years before the installation of one of these homemade ventilators and a period of two years after. Nine people were employed in this room. The average aggregate amount of sick

leave taken by them prior to the installation of the ventilator was 113 days per year. In no instance did the amount of sick leave fall below 103 days a year. After the installation of the ventilator the same clerks did not exceed 36 days of sick leave per year. This gives an annual saving of 79 days per year as a result, it is believed, of the installation of this ventilator. In money values the amount of this sick leave is in excess of $525 per year.

SANITATION.

The insanitary condition which obtains throughout the entire building is noticeable. It was found in going through the building that in practically no rooms, with the exception of perhaps the chief clerk's and the commissioner's rooms, had any practical cleaning methods been employed. In the examining divisions the drawings in the files and the letter boxes on the shelves were covered with dust, and the walls of the rooms are never washed or cleaned. This results in the walls being so dingy as not to reflect the light. In the public search room the records and other furnishings of the room are so dirty that it is impossible for the attorneys to work in the room and maintain clean clothes or linen. The files of the sale copies of patents in the galleries are so dirty that it is impossible for the boys to pull the copies in their ordinary clothes. This forces them to use overalls in the winter time, while in the summer time they work in bathing suits or in athletic clothes. After working in these files all day the boys are covered with the dirt so that they have the appearance of having worked as stokers. The galleries are so dirty that the health of the boys working therein is impaired. They are forced to take sick leave from the office on account of throat trouble and eye trouble resulting from the breathing of this polluted air. The only cleaning that is done is merely to sweep between the cases. This simply raises the dust which settles on the copies and accumulates. No attempts have been made to clean these copies. It seems impossible to clean the files by any other method than the vacuum system, as any method of sweeping or dusting the floors tends to move the dust from one place to another, and does not prevent its accumulation. If new floors are laid in this building, the walls properly painted, and new equipment furnished to the office, it will be possible to put the office in the proper hygienic condition. Other remedies would be only partially successful.

The plumbing and sewage equipment of the office is lacking in many respects. The number of lavatories in the building is inadequate. In many cases the employees are forced to walk from one to three blocks to reach such accommodations. This causes a waste of time, as many employees must walk at least three blocks in going to and returning from these places. The dirty, filthy records neces-

sitate the employees washing their hands in many cases several times a day. On the third floor, where the public and the attorneys are employed in searching patents, there are not the proper facilities for washing. No towels are furnished to the public, so that the attorneys, after searching in the dusty files, are forced to wash, and to wipe their hands on handkerchiefs.

Proper lavatory facilities should be installed throughout the entire office both for the employees and the attorneys. Sufficient towels should be supplied for the use of the attorneys. The present system of locking the lavatories should be discontinued.

GENERAL CONDITIONS.

A written description of the various rooms of the Patent Office can not give an adequate idea of the working conditions as they actually exist. Statements as to square feet of floor space, cubic feet of air space, lack of ventilation, natural or artificial light, etc., inadequate filing equipment and desks, etc., can not be fully appreciated unless considered in connection with a personal visit and inspection. The commission has not thought it necessary to describe all the rooms in detail, believing that anyone who may wish to do so can see for himself the unsatisfactory conditions under which the important and difficult work of the Patent Office is carried on.

RECOMMENDATIONS AS TO BUILDING.

The commission, as a result of its investigation, recommends that an appropriation be provided for the erection of a new building to be used exclusively by the Patent Office and to be designed and equipped to meet the peculiar needs of the work of the office, the building, when authorized, to be fully appropriated for, so as to be completed within two years.

In order to provide adequately for present conditions, as well as future growth, in making plans for a building for the Patent Office, provision should be made for not less than 500,000 square feet of floor space and 10,000,000 cubic feet within the building. On the basis of the average cost of Government buildings of such a type as would be desirable for the Patent Office it is estimated that a suitable building would cost between four and five million dollars. This estimate does not include the cost of site nor the equipping and furnishing of the building, which would cost from one to two million dollars more, based upon the locality in which the building is constructed.

Pending the erection of a new building, space should be provided without delay within the present Patent Office Building to supply present needs and those of the near future. It is believed this can best be accomplished through the vacating by the office of the Secretary of the Interior of that portion of the building now occupied

by some of its divisions. Some space may be gained by the installation of modern filing devices, office furniture, and other like equipment, which may be utilized in a new building, and by the destruction of certain records, files, etc., which are not of value; but this remedy would only enlarge to a small extent the space, now much too small, allowed to the employees in the several rooms.

OFFICE EQUIPMENT.

The office equipment in the way of furniture and filing cases is insufficient, antiquated, and insanitary. The desks in use are of various sizes and styles, and in many instances they are desks discarded by other offices of the Interior Department. These are, as a general rule, of the old style, in which the body of the desk extends to the floor. In many cases the rooms are more crowded than they would be otherwise by the use of old desks that are too large for the purposes for which they are used. A majority of the desks should be replaced by new ones of a style adapted to the needs of the office.

The filing equipment of the Patent Office is a most important feature in consideration of the crowded condition of the rooms. The necessity for more filing space presents a problem that can never be satisfactorily solved in the present quarters. Reference has been made heretofore to the filing of 50,000,000 copies of patents on wooden shelves in all parts of the building. It is impossible in the present quarters to bring these copies together and arrange them in a manner to protect them from dust and to make them readily accessible in order that 10,000 or 11,000 different copies that are sold daily may be handled with the least cost.

The filing of the records of completed cases and of pending cases is a problem that is difficult of solution, because there is no suitable or adequate space for the purpose. The office has entirely outgrown the facilities for filing and storage.

In the examining divisions there are more than 45,000 cubic feet of cases containing examiners' copies of patents and pending applications. In the attorneys' search room there are nearly 10,000 cubic feet of cases containing patents for search purposes. The Publication Division has about 95,000 cubic feet of cases containing copies of patents for sale. In the galleries are nearly 10,000 cubic feet of cases containing the original files of patent specifications; over 14,000 cubic feet of cases containing original specifications; about 11,000 cubic feet of cases containing abandoned and forfeited files; about 3,000 cubic feet of cases containing original drawings; and about 13,000 cubic feet of other files.

There are about 194,000 cubic feet of filing cases in the Patent Office. This means that about 14 per cent of the present room space is occupied by files. These figures do not include about 43,000 cubic

feet of cases containing models which are filed in the basements of the Office Buildings of the Senate and House of Representatives.

For files that are not in current use it is merely a question of finding space where they can be reasonably accessible. In the case of files in the examiners' rooms as well as in the clerical divisions, the crowding due to the presence of files required for current work can not be corrected under present conditions. In the case of a number of examining divisions it has been found necessary to place the files in the corridors, there being no space whatever to contain them in the rooms. This is not only inconvenient, but causes a loss of time.

The commission has considered the question of how the condition of the files in the examining divisions can be improved. The small drawers in which copies of patents are filed in order that they may be accessible for search are not objectionable for the purpose for which they are used, excepting as to the amount of space taken up by them. The examiner may be required to search through a number of these drawers containing copies relating to the class which he is examining. When other quarters are provided, serious consideration should be given to the question whether vertical files can not be adapted to the purpose of holding copies for search, with a considerable economy of space and saving of time.

PNEUMATIC-TUBE SERVICE.

The large amount of correspondence, the number of copies of patents collected daily from all parts of the building, and the amount of travel by employees throughout the building called attention to the necessity for some system of transmitting papers through the building otherwise than by messengers or clerks. It would appear that conditions in the Patent Office are such as to make profitable the operation of a mechanical system of conveying papers. It is the opinion of the commission that a pneumatic-tube system, or some improved method of transmitting papers, should be in use in the Patent Office. As to the advisability of installing such a system at the present time, there may be a question. If the Patent Office is to be provided with a new building, the details of the system installed in the present building ought to be adapted to the needs of the next occupants, although it is probable if a system were installed for the Patent Office work in the present building it would pay for itself in increased efficiency and economy in the course of a very few years.

BUSINESS METHODS.

The Patent Office is engaged in the work of examining applications for patents and considering and deciding upon the questions involved in the grant or rejection. Incident to the performance of this duty

there are the usual clerical services to be performed. Over one-half in numbers of the force of the office is not engaged in the work of examining applications, but is employed in aiding examiners as stenographers and typewriters or employed in the divisions having to do with publications, preparing the Official Gazette, handling the mail and finances, and the usual clerical duties of a Government office.

In making the investigation the commission has confined its work almost entirely to questions relating to the methods employed in the technical work of examining applications. The size of the clerical force is dependent, of course, upon the amount of work incident to the examination and action upon applications. It has not been possible, therefore, to go into all the details of the work performed by the clerical force in each of the divisions outside of the examining divisions, nor was it considered necessary or advisable that this report should contain recommendations looking to a reduction in the force of clerical employees by the introduction of better methods of doing the clerical work or the discontinuance of such work as may be found unnecessary.

The investigation of the methods of doing business in the executive departments of the Government with the view of introducing new or improving old methods of transacting business is a duty imposed upon the commission by the President under authority of the regular appropriation for its work. The joint resolution under which the present investigation has been made has reference directly to the administration of the office, its methods of doing the technical work, and the building and equipment provided therefor. In view of the short time allowed for making the investigation and report, it was found impossible to give thorough consideration to the many problems of detail involved in the doing of the clerical work. As a part of the regular work upon which the commission is engaged, it hopes to be able to give further time to the detail of the business methods of the Patent Office, with a view of submitting suggestions for improvements therein and for the introduction of some labor-saving devices which will facilitate the work and reduce the cost.

For these reasons the commission has confined this report to the technical as distinguished from the clerical work, and has not included the large amount of detailed information collected with reference to the methods of doing the clerical work of the office. Such details could not be included in this report without extending it beyond reasonable limits, and could not be accompanied by definite recommendations, due to the fact that it will be necessary to make a test in many cases of the availability of methods and appliances to the particular clerical work done in the Patent Office.

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CHAPTER 9.

PUBLICATIONS.

The printing and distribution of publications by the Patent Office demands special consideration in any investigation into the economy and efficiency with which the affairs of that office are conducted. The fact that the office expended for printing and binding during the past fiscal year approximately $600,000 warrants an examination into this particular activity. When it is stated that the total expenditures of the Patent Office for the fiscal year ended June 30, 1912, were $2,018,795.44, it will be seen that more than one-fourth of the total was devoted to issuing the publications of the office. Such a large annual expenditure would indicate that the publication work was of unusual proportions, and that there might be opportunity for some reduction in the output or changes in present practices with no loss in value or in the wide dissemination of the information published.

As a result of an investigation into this subject, the facts indicate the existence of a situation similar to that frequently found in other executive departments and Government establishments with respect to publications; that is, (1) that apparently useless publications are being printed; (2) that the same information is duplicated in other publications; and (3) that the information published does not seem to be presented in a manner to be of the greatest value to those persons having need of it.

LIST OF PUBLICATIONS.

The total number of publications issued by the Patent Office embraces 31 separate and distinct volumes or pamphlets. These publications may be divided into the following classes:

1. Copies of patents, trade-marks, and designs kept for sale.
2. The Official Gazette, and its various indexes.
3. The decisions of the Commissioner of Patents.
4. The reports of the Commissioner of Patents.
5. Miscellaneous pamphlets, such as patent laws, rules of practice, extracts from the rules of practice, etc.

A complete list of the publications issued by the Patent Office, with a description of each publication in some detail, is given in Appendix H to this report.

DISTRIBUTION OF THE WORK OF PRINTING.

Under the present system the work that is necessary for producing the various publications is performed at, and collected from, six different establishments. These various establishments, and the particular class of work performed by each, are as follows:

1. Printing, at the Government Printing Office.
2. Lithographing, at the Columbia Planograph Co., Washington.
3. Photolithographing, at the Sackett-Wilhelms Co., New York City.
4. Engraving, at the National Engraving Co., Washington.
5. Printing the headings on original drawings, at the Patent Office.
6. Assembling and wire stitching printed copies of patents, at the Patent Office.

It would appear from a glance at this list of establishments, all of which contribute to the production of the Patent Office publications, that some changes might be desirable looking to the consolidation in one place of all work connected with the printing and issuing of publications. Although the consolidation here suggested would result in a wide departure from past practices, especially with respect to having performed at the Government Printing Office all lithographing and photolithographing work, it is believed, nevertheless, that such a change could be effected with advantage to the service. In fact, after a brief inquiry into the matter, it was found that there are no serious objections which would prevent all branches of the work necessary for producing the Patent Office publications from being performed at the Government Printing Office, provided the necessary equipment was installed. It is the opinion of the commission that a more extended study of this important phase of the Patent Office printing would demonstrate the practicability of this change and that an economy would result. By centralizing the work it would be possible to secure better control and to hasten any part of the work as occasion required, thus better serving the public.

DISTRIBUTION OF PUBLICATIONS.

At the present time the work of distributing publications is divided about equally between the superintendent of documents and the Publication Division of the Patent Office. After the passage of the act of Congress of August 23, 1912, which provided for the distribution by the superintendent of documents of all Government publications, the chief of the Publication Division of the Patent Office and the superintendent of documents effected an arrangement by which the latter is to have the custody and distribution of the more important publications of the Patent Office. These important publications

include the Official Gazette and its indexes, the decisions of the commissioner, and one of the annual reports of the Commissioner of Patents. The remaining publications, with the exception of the printed copies of patents kept for sale, were deemed to be of such a character and minor importance as to permit their remaining in the possession of the Patent Office, to be distributed by it. It is essential that copies of patents, designs, trade-marks, etc., shall be distributed by the Publication Division of the Patent Office in order to meet the constant demands for these copies which are made daily by a large number of attorneys and others in Washington. Local attorneys and others find it necessary, in connection with their daily examinations and searches at the Patent Office, to secure immediately extra copies of certain patents for their own use. This can be done very readily by going to the Publication Division of the Patent Office.

DEFECTS IN PUBLICATIONS.

In order to bring out more clearly some of the present defects in a few of the more important publications now being issued by the Patent Office and to suggest improvements that might be made with a view to enhancing their value and effecting economies in cost, there is given the following brief discussions of each of these publications under their separate titles.

THE OFFICIAL GAZETTE.

The Official Gazette is published under authority of the act of Congress of January 12, 1895, which provides:

> The Commissioner of Patents, upon the requisition of the Secretary of the Interior, is authorized to continue the printing of the following * * *
>
> Third. The Official Gazette of the United States Patent Office in numbers sufficient to supply all who shall subscribe therefor at $5 per annum; also to exchange for other scientific publications desirable for the use of the Patent Office; also to supply 1 copy to each Senator, Representative, and Delegate in Congress; also to supply 1 copy to 8 such public libraries having over 1,000 volumes, exclusive of Government publications, as shall be designated by each Senator, Representative, and Delegate in Congress, with 100 additional copies, together with bimonthly and annual indexes for all the same; of the Official Gazette the "usual number" shall not be printed.

The object of the Gazette is to make public, in condensed form, the weekly transactions of the Patent Office. With the exception of the printed copies of all patents issued, the Official Gazette is the most important publication. It is almost invaluable as a work of reference to a large number of patent attorneys and patent examiners and inventors and to some degree the general public. It is published on each Tuesday simultaneously with the weekly issue of patents and contains sections devoted to the following classes of information:

1. An illustration and the first five claims of each patent.
2. An illustration and description of each design.

3. An illustration of each trade-mark "Published for opposition."
4. A list of trade-marks registered.
5. A list of labels registered.
6. A list of prints registered.
7. The decisions of the Commissioner of Patents.

The Gazette appears in magazine form and contains an average of 250 pages in each weekly issue. Of each issue there are printed 5,540 copies, of which number 2,520 are distributed free and 3,020 are sent to subscribers who pay $5 per year for the Gazette, including the monthly and annual indexes. The cost of publishing the Gazette during the fiscal year ended June 30, 1912, was $135,713.94; the receipts from sales were $15,100. The Gazette is wrapped and mailed by the office of the superintendent of documents.

It is believed that a material improvement can be made in the contents of the Gazette, and the purposes of its publication best served, if instead of publishing the first five claims of each patent there be substituted a brief or summary of the patent.

Any proposed change in the manner of presenting the information contained in the Official Gazette is a matter of great importance and a change is far-reaching in its effect. This is due to the fact that the Gazette contains information of much value to the public generally, as well as to patent attorneys and inventors. Any recommendation involving a radical change in the contents of the Gazette should be supported by facts which clearly prove the advisability of the proposed change.

It is believed, however, that after an investigation into the purposes for which the Gazette is published the recommendation here made and the evidence supporting it should command careful consideration. The recommendation of the commission is that in place of the first five claims of each patent which now appear in the weekly issues of the Gazette there be substituted a brief or summary of the patent.

At the present time there is strong opposition among a number of the officials and a large number of patent attorneys to publishing the first five claims. It is said that the information now being published in the Gazette relative to patents is of practically no value to them in their work.

Prior to the year 1907 there was an order promulgated by the Commissioner of Patents which required all examiners to prepare a brief of the patent at the time of its allowance. This brief was not intended for publication purposes, but was retained in the files of the examining division where the patent was allowed in order that it might be available at any future time for purposes of reference and search. It will be seen, therefore, that such a brief would be of value; and it may be stated that at the present time such briefs are being prepared by some examiners for their own personal use, although the preparation

of the official briefs, as previously required by order of the Commissioner of Patents, has been ordered discontinued.

An examination at random of the first five claims of each patent as now published in the Official Gazette reveals the fact that in a large majority of cases such information is practically worthless for search purposes or in furnishing complete information, because the first five claims, when there are a larger number, are not sufficiently descriptive of the device, as a rule, to render it intelligible. No one claim, or even all the claims, in most patents completely describes what is set forth in the specifications. The claims are drawn only to the novelty of the device, which may be some obscure illustrated feature or a particular element in the structure, so that the general combination shown is unexplained. Again, claims are drawn up by attorneys, some of whom are often unnecessarily prolix and ambiguous in their writing.

PUBLICATION OF ALL CLAIMS.

It has been suggested by a number of attorneys that all claims should be printed in the Gazette, and some have suggested that all drawings should be published also. The latter suggestion would result in giving a complete copy of each patent and enlarge the Gazette from a weekly of 250 pages to one of 1,500 or more pages. This can not be considered seriously. The Gazette is, and ought to be, in the nature of a reasonably large illustrated index of patents. A full copy of any patent that may be shown can be purchased at the price of 5 cents.

The publication in the Gazette of all claims was discontinued because, as the number of patents issued increased rapidly, the size and cost of the Gazette (only about 12 per cent of cost being paid by subscribers) became excessive. To now return to that method of publication is not warranted, in the opinion of this commission.

ADVANTAGES OF BRIEF.

Aside from the advantage to be gained by substituting for the first five claims a condensed statement or brief of the patent, there would be a large saving also in the space taken up by the first five claims as now published, and a consequent saving of a considerable amount in the cost of publishing the Gazette, which at the present time amounts to approximately $135,000 per annum. There would result also a large reduction in the number of pages in the Official Gazette, which is a most desirable end.

Following is a showing, in tabular form, of the number of words contained in the first five claims of each of certain patents (the list not including patents with a large number of claims) as printed in

the Official Gazette, in comparison with the number of words contained in an accurate brief which has been made of each, and the entire number of claims in each patent:

No. of patent.	Number of claims.	Number of words in first five claims.	Number of words in brief.
678443	15	368	117
910421	15	210	168
949507	5	425	74
950919	8	374	68
962263	5	419	57
1041721	5	874	124
1041722	11	813	383
	59	3,483	991

It is found that approximately 71 per cent of the space now devoted to the claims of each patent would be saved with a consequent similar saving in each cost involved in publishing the Official Gazette in its present form.

A few illustrations showing the space that would be gained and the increased value that would be given to the description of the invention in the Gazette if the changes suggested were adopted are here given:

PATENT NO. 678443.

First 5 claims printed in Official Gazette, 368 words.
Brief prepared by examiner in Patent Office, 117 words.
Illustrated by 1 drawing.

[678443. Storage battery. William J. Still, Toronto, Canada. Filed Mar. 24, 1899. Serial No. 710355. (No model.)]

Claim.—1. An electrode for storage batteries comprising a U-shaped plate having a body portion and a series of projections extending from opposite edges thereof, and at right angles thereto, forming a pair of parallel combs, said projections constituting supports for the active material and interposed therebetween, substantially as and for the purpose specified.

2. An electrode for storage batteries comprising a U-shaped plate having a body portion and a series of comb-like fingers projecting therefrom, at opposite sides thereof and at right angles thereto,

[Substantially a copy of brief used by examiner in Division 3.]

Comb-like electrode *A* made by slitting and twisting a conductor place, the twisted portions being bent at 90° to form a U-shaped member. Members *A* and similar parts with their teeth successively nearer together are concentrically arranged with their terminals A^1, A^2, etc., soldered together. Lips a^2 on the largest plate are bent around the terminals of the other plates A^4 and A^5. A similar tongue a^3 holds the bottoms together. The spaces between the strips are filled with active materials. The comb portions are interleaved, the positive terminal being on one side, the negative the other. Slitted separators *D* are

said fingers being twisted so as to lie at right angles to the plane of said body portion and constituting a pair of parallel supports for the active material interposed therebetween, substantially as and for the purpose specified.

3. In a storage battery, a series of U-shaped electrodes fitting one within the other and each comprising a plate having a body portion and a series of comb-like fingers or projections at opposite edges thereof and extending at right angles to the body portion and a terminal on each of said body portions suitably connected together, said comb-like fingers constituting supports for the active material interposed therebetween, substantially as and for the purpose specified.

4. In a storage battery, a series of U-shaped electrodes fitting one within the other and each comprising a plate having a body portion, comb-like fingers or projections at opposite edges thereof and at right angles to the body portion, terminals at the top of said body portion of each plate suitably connected together and a lip at the bottom of the body portion of the outer plate, which spans and embraces the bottoms of the adjacent plates connected thereto, the comb-like fingers on each plate constituting supports for the active material interposed therebetween, substantially as and for the purpose specified.

5. An electrode for storage batteries comprising a U-shaped plate having a body portion and a series of comb-like fingers projecting therefrom at opposite edges thereof and at right angles thereto, said fingers constituting a pair of parallel supports for the active material interposed therebetween, and elastic bands embracing said comb-like fingers, substantially as and for the purpose specified.

fitted over the teeth. Rubber bands *B* hold the mass together and allow expansion.

PATENT No. 910421.

First five claims printed in Official Gazette, 210 words.
Brief prepared by examiner in Patent Office, 168 words.
Illustrated by 1 drawing.

[910421. Interlocking construction for docks, piers, jetties, building foundations, etc. Henry W. Schlueter, Denver, Colo., assignor, by mesne assignments, to Interlocking Tube Co., a corporation of Illinois. Filed Feb. 1, 1908. Serial No. 413731.]

1. Pipes or tubes provided with interlocking tongues and grooves, the tongues being hollow and in communication with their respective pipes and the grooves being interiorly located.

2. Pipes or tubes provided with interlocking tongues and grooves of dove-tailed form, whereby the interlocked elements are capable of longitudinal movement but locked against lateral displacement when assembled, the tongues being hollow and in communication with the said pipes and the grooves being interiorly positioned.

3. A composite column composed of a pipe or tube having an exteriorly protruding hollow dove-tailed tongue in communication with the pipe, the said pipe or tube together with its hollow tongue being provided with a filling the pipe or tube forming the exterior wall of the column, substantially as described.

4. A composite column composed of a pipe having an exteriorly protruding tongue and a groove of counterpart shape, the pipe being filled with cement or concrete, and provided with a metal reinforcement, substantially as described.

5. A wall composed of a series of pipes or tubes provided with interlocking tongues and grooves, the tongues being hollow and in communication with their respective pipes and the grooves being interiorly located the interlocking elements being constructed to permit longitudinal movement but to prevent lateral displacement when assembled, substantially as described.

[Claims 6 to 15 not printed in the Gazette.]

The invention consists of a sectional casing or tube which has along one side a longitudinal tongue of dovetail shape in cross section, and along the opposite side a recess forming the counterpart of the tongue, whereby adjacent casings may be interlocked into a continuous wall and held against lateral displacement.

The exteriorly protruding hollow tongue is in communication with the interior of the casing, so that the concrete filling placed within the casing will extend into the tongue and lie within the groove of the adjacent casing.

These concrete units are adapted for the construction of piers, docks, sea walls, jetties, and cofferdams.

The reinforce of each unit projects above the casing and is embedded in the reinforced concrete girder molded upon the series of casing units.

Each casing is beveled at its bottom, so that the driving of the casing tends automatically to maintain said casing in contact with the one previously driven and to prevent spreading, which would strain or rupture the interlocking tongue.

PATENT No. 949507.

First five claims printed in Official Gazette, 425 words.
Brief prepared by examiner in Patent Office, 74 words.

949507. Art of rejuvenating storage batteries. Alfred O. Tate, Toronto, Ontario, Canada. Filed May 12, 1908. Serial No. 432390.]

1. The method or process of giving increased life to a storage battery plant which consists in disconnecting such of the cells at stated intervals as have become deteriorated, owing to the presence of an abnormal quantity of oxid upon the anode plates thereof through continuous charging in the same direction; substituting therefor a like number of cells of normal or original efficiency which have been charged while disconnected, and in subjecting the disconnected cells to a charging current flowing in a reverse direction to that used when previously charged.

2. The method or process of giving increased life to a storage battery plant, consisting in cutting out at stated intervals a definite percentage of the cells and substituting therefor a like percentage of similar cells which have been previously charged to their normal or original efficiency; then fully charging the disconnected cells, through the action of a current flowing in a reverse direction to that utilized in previously charging them, until they shall have assumed their normal or original efficiency.

3. The method or process of giving increased life to a storage battery plant, consisting in cutting out at stated intervals a definite percentage of the cells and substituting therefor a like percentage which have been previously charged to their normal or original efficiency; then fully charging the disconnected cells, through the action of a current flowing in a reverse direction to that utilized in previously charging them and in successively continuing this substitution and operation in sequence throughout the entire system of cells, until they shall have assumed their normal or original efficiency.

4. The method or process of giving increased life to a storage battery plant, consisting in determining by successive tests which of the cells have become de-

[Copy of brief made by examiner for use in Division 3.]

Increases life of battery plant by cutting out, at stated intervals, a definite percentage of the cells and substituting therefor a like percentage of similar cells which have been restored. Then charge disconnected cells by current in a direction reverse to that used in previous charge. Due to charging, anode strips are attacked by plant action so as to expose whole core and form it into oxids. Charging current is always in same direction.

teriorated by successive charging always in the same direction, and in substituting therefor a properly rejuvenated cell or cells; then subjecting the disconnected cell or cells to a charging current flowing in a reverse direction to that previously used in charging the same.

5. The method or process of giving increased life to a storage battery plant, consisting in determining by successive tests which of the cells have become deteriorated by successive charging always in the same direction, and in substituting therefor a properly rejuvenated cell or cells; then subjecting the disconnected cell or cells to a charging current flowing in a reverse direction to that previously used in charging the same until it or they shall have assumed the normal or original efficiency and in successively continuing this substitution and operation in sequence throughout the entire system of cells.

PATENT No. 956919.

First five claims printed in Official Gazette, 374 words.
Brief prepared by examiner in Patent Office, 68 words.
Illustrated by 1 drawing.

[956919. Process for the preparation of secondary-battery plates. Frank A. R. Wright, Cleveland, Ohio. Filed Mar. 27, 1909. Serial No. 486132.]

1. The process of forming peroxid and spongy lead plates which consists in placing within a single tank having a suitable electrolyte therein two series of lead plates, the plates of each series being electrically connected with each other in parallel relation said electrolyte containing an oxidizing chemical substance in such quantity as to produce lead peroxid upon anode plates, sending a current through the plates and the electrolyte in one direction during which time one series of plates remains substantially unchanged while lead peroxid is deposited upon the other series of plates, then passing the current in the reverse direction through the plates and the electrolyte whereby the peroxid previously formed upon the one series of plates is completely reduced to spongy lead and the required amount of peroxid of lead is deposited upon the plates which were formerly unchanged.

Two sets of plates are simultaneously formed in a sulfuric acid bath containing nitric acid or other oxidizing agent. The current is passed until one set of plates is completely oxidized, then reversed to oxidize the other set and reduce the first to spongy lead. The plates are then washed and placed in regular electrolyte for use. Dummy electrodes may be used, and the anodes only be formed.

2. The process of forming peroxid and spongy lead plates which consists in immersing a plurality of plates in a suitable electrolyte, sending a current of electricity through said plates and electrolyte in one direction, the electrolyte containing an oxidizing chemical substance in such amount that the cathode plates are unaffected when the current is passing through the plates, allowing the current to pass a sufficient length of time until the desired deposit of peroxid of lead is formed upon the anode plates, then reversing the passage of the current through said plates and electrolyte and allowing the current to pass a sufficient length of time to reduce the peroxid of lead previously formed to spongy lead and to build up peroxid of lead upon the plates previously unaffected.

3. The process of forming peroxid and spongy lead plates which consists in immersing a plurality of plates in an electrolyte, said electrolyte comprising sulfuric acid and an oxidizing chemical substance, sending a current of electricity through said plates and electrolyte in one direction and then reversing the direction of the current through said plates and the electrolyte, the oxidizing chemical being present in the electrolyte bath in such quantities, so that when the current is first allowed to pass lead peroxid will be formed upon the anode plates and when the current is reversed the peroxid of lead will likewise form upon the anode plates.

PATENT NO. 962263.

First five claims printed in Official Gazette, 419 words.
Brief prepared by examiner in Patent Office, 57 words.
Brief published in British Abridgments, 120 words.
Illustrated by 1 drawing.

[962263. Secondary battery. Hugo Paul Schreiber, London, England. Filed July 13, 1909. Serial No. 507291.]

1. In secondary electric batteries in combination an external electrode in the form of a cylindrical leaden tube, a layer of active material inside said tube, a cylindrical porous division inside said active material, an internal electrode in the

Concentric cylindrical lead tubes *b* and *c* pasted with lead oxide active materials. Passages *n* are formed by punching the metal of the tubes or by welding on pieces of tubes, thus allowing circulation of electrolyte. Tubes rest on insulating bases and are separated by a cylinder of spongy wood, supported in a groove in the base.

form of a cylindrical leaden tube inside said porous division, a layer of active material surrounding said inner leaden tube, a liquid electrolyte and passages through said layers of active material lined with the metal of the electrodes, as set forth.

2. In secondary electric batteries in combination an external electrode in the form of a cylindrical leaden tube, a layer of active material inside said tube, a cylindrical porous division inside said active material, an internal electrode in the form of a cylindrical leaden tube inside said porous division, a layer of active material surrounding said inner leaden tube, an insulating base in contact with one end of said porous division, a liquid electrolyte and passages through said layers of active material lined with the metal of the electrodes, as set forth.

3. In secondary electric batteries in combination an external electrode in the form of a cylindrical leaden tube, a layer of active material inside said tube, a cylindrical porous division inside said active material, an internal electrode in the form of a cylindrical leaden tube inside said porous division, a layer of active material surrounding said inner leaden tube, an insulating base provided with a circular groove receiving one end of said porous division, a liquid electrolyte and passages through said layers of active material lined with the metal of the electrodes, as set forth.

4. In secondary electric batteries in combination an external electrode in the form of a cylindrical leaden tube, a layer of active material inside said tube, a cylindrical porous division inside said active material, an internal electrode in the form of a cylindrical leaden tube inside said porous division, a layer of active material surrounding said inner leaden tube, an insulating base provided with a circular groove receiving one end of said porous division, a liquid electrolyte, passages through said base for the circulation of said electrolyte and passages through said layers of active material lined with the metal of the electrodes, as set forth.

5. In secondary electric batteries in combination an external electrode in the form of a cylindrical leaden tube, a layer of active material inside said tube, a cylindrical porous division inside said active material, an internal electrode in the form of a cylindrical leaden tube inside said porous division, a layer of active material surrounding said inner leaden tube, both layers of active material being of thickness equal to the diameter of said inner leaden tube and passages through said active material lined with the metal of the electrodes, as set forth.

PATENT NO. 1041721.

Claims printed in Official Gazette, 874 words.
Brief, 124 words.
Illustrated by 1 drawing.

[1041721. Rotary engine. Walter Ball, Boston, Mass., assignor of one-half to John F. Cooley, New York, N. Y. Filed Mar. 27, 1908. Serial No. 423705. (Cl. 121—94.)]

1. In a rotary engine, two rotary elements mounted on parallel, relatively fixed axes offset from each other, a straight shaft, one of said elements being fast on said shaft, said element and shaft turning together as a single or integral part, said shaft supported in suitable bearings, and the other of said elements being supported by relatively fixed bearings whose axis is eccentric to the axis of said shaft, connection between said elements to cause them to rotate in the same direction at equal angular velocities, each of said elements being provided with spaced, curved walls, said walls forming a channel describing a curved path, the curved walls of each element projecting within the curved channel of the other element, said walls adapted as the elements rotate to remain tangent to each other, the point of tangency being progressive and remaining in the same plane with relation to a plane passing through the offset axes of the elements.

2. In a rotary engine, two rotary elements mounted on parallel, relatively fixed axes offset from each other, a straight shaft, one of said elements being fast on said shaft, said element and

A rotary engine comprising a closed casing having outlet port (d^6). In the casing are two rotary elements, having parallel axes (A′ and C′) of which one (A) is fixed to a shaft and the other runs (by means of projecting annuli) on annular bearings surrounding the shaft. Connections (rollers E extended through both elements and running on bearing surfaces (e) similar placed in both elements) between the elements causes them to rotate in the same direction at equal angular velocities. The elements are provided with interfitting, spaced, spirally curved walls (a and c) forming hannels between them but constantly remaining tangent to each other in the plane passing through the axes. The shaft is hollow, providing a fluid inlet communicating with the channels.

shaft turning together as a single or integral part, said shaft supported in suitable bearings, and the other of said elements being mounted in relatively fixed annular bearings surrounding said shaft but eccentric thereto, connection between said elements to cause them to rotate in the same direction at equal angular velocities, each of said elements having spaced, curved walls, said walls forming a channel describing a curved path, the curved walls of each element projecting within the curved channel of the other element, said walls adapted as the elements rotate to remain tangent to each other, the point of tangency being progressive and remaining in the same plane with relation to a plane passing through the offset axes of the elements.

3. In a rotary engine, two rotary elements mounted on parallel, relatively fixed axes offset from each other, a straight shaft, one of said elements being fast on said shaft, said element and shaft turning together as a single or integral part, said shaft supported in suitable bearings, and the other of said elements being mounted in relatively fixed annular bearings surrounding said shaft but eccentric thereto, connection between said elements to cause them to rotate in the same direction at equal angular velocities, each of said elements having spaced, curved walls, said walls forming a channel describing a curved path, the curved walls of each element projecting within the curved channel of the other element, said walls adapted as the elements rotate to remain tangent to each other, the point of tangency being progressive and remaining in the same plane with relation to a plane passing through the offset axes of the elements, and a casing inclosing both rotary elements and carrying said eccentric bearings one within the other, said casing providing a closed chamber communicating with said channels.

4. In a rotary engine, two rotary elements mounted on parallel, relatively fixed axes offset from each other, a straight shaft, one of said elements being fast on said shaft, said element and shaft turning together as a single or integral part, said

shaft supported in suitable bearings, and the other of said elements being supported by relatively fixed bearings whose axis is eccentric to the axis of said shaft, connection between said elements to cause them to rotate in the same direction at equal angular velocities, each of said elements being provided with spaced, curved walls, said walls forming a channel describing a curved path, the curved walls of each element projecting within the curved channel of the other element, said walls adapted as the elements rotate to remain tangent to each other, the point of tangency being progressive and remaining in the same plane with relation to a plane passing through the offset axes of the elements, and means to adjust the extent of offset between said axes.

5. In a rotary engine, two rotary elements mounted on parallel, relatively fixed axes offset from each other, a straight shaft, one of said elements being fast on said shaft, said shaft and element turning together as a single or integral part, said shaft supported in suitable bearings, and the other of said elements being supported by relatively fixed annular bearings surrounding said shaft but eccentric thereto, the element mounted on the shaft being provided with a channel describing a spiral path, said shaft being made hollow and the inner end of the spiral channel communicating with said hollow shaft, the outer end of said spiral channel opening through the periphery of said element, and the other of said elements having a wall describing a spiral path corresponding with the spiral path of the channel and projecting therein, said wall adapted as said elements rotate to remain tangent to the walls of the channel, the latter element being supported by annular bearings surrounding said shaft but eccentric thereto, and a casing inclosing both of said elements and carrying said shaft bearings and said eccentric annular bearings, said casing constituting a chamber spaced from the periphery of said element with which chamber the outer end of said spiral channel communicates, said chamber provided with a port.

PATENT No. 1041722.

First five claims printed in Official Gazette, 813 words.
Brief, 383 words.
Illustrated by 1 drawing.

[1041722. Type-Writing Machine. Walter E. Barnard, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of Delaware. Filed Aug. 18, 1910. Serial No. 577860. (Cl. 197—157.)]

1. In a typewriting machine, the combination with an actuator which reciprocates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, and means with which the shaft cooperates when moved longitudinally to cause the shaft to be rotated during such longitudinal movement to its aforesaid intermediate or unsetting position.

2. In a typewriting machine, the combination with an actuator which reciprocates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, and means with which the shaft cooperates when moved longitudinally to cause the shaft to be rotated dur- ng such longitudinal movement to its aforesaid intermediate or unsetting position, and means to oppose turning of the shaft in either direction when the latter is in the unsetting or silencing position.

Mechanism for enabling either color of a typewriter ribbon consisting of two parallel strips of different colors to be vibrated to the printing point of a visible typewriter or for enabling neither to be presented, as is desired for stenciling. An actuator on the universal bar is capable of being placed in three positions, a central one, one to the left of this, and one to the right, whereby, through known mechanism, neither of the colors is presented in the first position, one of the two in the second, and the other in the third. A link connects the actuator to a rock shaft 24, certain features of which enable it to be held in any one of three positions by two movements of rotation and one movement of translation. The rock shaft has at its forward end a transverse plate each end of which carries a key. The end of the shaft is formed to constitute a key. Clockwise rotation of the shaft to a certain amount is effected by pressure on the right-hand key and counter-clockwise rotation by pressure on the left-hand key. The latter causes the actuator to be moved by its link to the left, the former causes it to be moved to the right. Horizontal position of the keys corresponds to the central position of the actuator. The shaft is journaled in frame members in which it may also slide. It carries a sector arm against which a spring detent presses, there being two notches in the sector, one being engaged by the detent when the shaft is rotated to the left and the other when it is rotated to the right. One of the bearings of the shaft is a plate with rearwardly extending flanges, which limit the movement of the shaft by reason of the fact that the sector arm is placed between them. In front of this plate is an arm on the shaft with a forwardly bent wedge-shaped end that cooperates with a slot in the plate. When the shaft is pressed back while in either position of rotation, the wedge-shaped end of the arm presses against one

3. In a typewriting machine, the combination with an actuator which reciprocates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, means with which the shaft cooperates when moved longitudinally to cause the shaft to be rotated during such longitudinal movement to its aforesaid intermediate or unsetting position, and yielding means to oppose the turning of the shaft in either direction when the latter is in the unsetting position.

4. In a typewriting machine, the combination with an actuator which reciprocates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, and means with which the shaft cooperates when moved longitudinally to cause the shaft to be rotated during such longitudinal movement to its aforesaid intermediate or unsetting position, said last named means acting to oppose turning of the shaft in either direction when the latter is in the unsetting position, said shaft carrying a cross bar with a key at each end for rocking the shaft to the right or left hand ribbon-setting positions, and to cooperate with said shaft-rotating means to shift the shaft endwise forwardly.

5. In a typewriting machine, the combination with an actuator which reciprocates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, means with which the shaft cooperates when moved longitudinally to cause the shaft to be rotated during such longitudinal movement to its aforesaid intermediate or unsetting position, and yielding means to oppose the turning of the shaft in either direction when the latter is in the unsetting position, said shaft carrying a cross bar with a key at each end for rocking the shaft to the right or left hand ribbon-setting positions, and to cooperate with said shaft-rotating means to shift the shaft endwise forwardly, said shaft-rotating means comprising a spring which tends to rotate the shaft when the latter is moved endwise forwardly to its unsetting position, and a stop which engages the edge of the slot and rotates the shaft back to central position, which corresponds to the stenciling position of the actuator.

cates at the type strokes, of mechanism for setting the actuator to cause the same to vibrate either of two fields of ribbon to cover the printing point at the type strokes, said mechanism comprising a key controlled rock shaft which is rocked to the right to set the actuator for one of the ribbon fields, and to the left to set the actuator for the other of the ribbon fields, and having a position intermediate its right and left hand positions in which the actuator is set for neither ribbon field, said shaft being also movable longitudinally in its bearings, said shaft carrying a wedge or cam-shaped centering device, and means with which said centering device cooperates upon longitudinal movement of the shaft to turn the shaft during such longitudinal movement from either its right or its left hand position to its aforesaid intermediate or unsetting position.

[Claims 6 to 11 not printed in the Gazette.]

DISTRIBUTION OF GAZETTE TO LIBRARIES.

Before concluding this discussion of the Official Gazette, attention is called to one particular phase of its distribution wherein it is thought a large waste may exist. Reference is made to the distribution of the Gazette to the public libraries designated by Members of Congress. The designation of these public libraries and the distribution of the Gazette to them is provided for in the act of Congress approved January 12, 1895, hereinbefore referred to. In compliance with the law, there are distributed each week about 2,200 copies of the Gazette, or about 40 per cent of the entire weekly edition printed. A cursory examination into the matter of the extent to which this large number of copies is serving a useful purpose has brought to light the information that in the majority of cases the libraries receiving them have practically no call for the Gazette and in order to save the cost of binding and the great amount of space on their shelves that would be occupied by this publication many of the libraries simply consign the Gazette to the storage sections of their buildings without even taking off the wrapper. Many libraries would prefer not to receive the Gazette. In many places there is little call for the publication and the libraries would prefer not to be troubled with it.

There is another defect in the present distribution of these library copies in that there is no proper and systematic distribution of them according to the number of libraries in each city. For instance, to

some cities as many as 6 copies of the Gazette are being sent when all the interests of such cities would be served if they were receiving one-half or one-third the number of copies which they now receive. New York City receives about 120 copies of this distribution of the Gazette each week. This situation is the result of that section of the law which has been quoted under which each Senator, Representative, and Delegate in Congress is allowed to designate eight public libraries with the result that these designations, being made separately and independently, have a tendency to place copies in libraries where they are not needed or used.

It is believed that much good would result if a careful investigation were made into this matter in order to determine those libraries which have a real need for the Gazette and those which do not care to receive it. In other words, there should be a weeding out of those libraries which consign the Gazette to the waste pile from those which have a demand for it. Such an investigation should also attempt to make a more useful distribution of the Gazette with respect to the number of copies that would go to each city. If this could be done a considerable saving would be effected in the cost of the Gazette, and the interests of those communities which find the publication of value would be served.

In order to make this investigation more time must be taken than is allowed the commission in its inquiry under the joint resolution authorizing the present report.

It should be stated that in the bill "to amend, revise, and codify the laws relating to the public printing and binding and the distribution of Government publications" (popularly known as the Smoot bill), which passed the Senate April 9, 1912, and is now pending before the House of Representatives, the provision for the distribution of the Gazette to public libraries designated by Senators, Representatives, and Delegates in Congress was omitted with the purpose of discontinuing this entire distribution of approximately 2,200 copies each week.

It is believed, however, that to discontinue entirely the distribution of the Gazette to these libraries would not be advisable for the reason that in a large number of cities and towns there is a real need to have available for the public the weekly issue of the Official Gazette. It is thought, therefore, that a distribution to libraries should be continued, but, as suggested, along such lines as would best serve the interests of the public and, at the same time, save to the Government a large percentage of the cost involved in the present plan of distribution.

SUBSCRIPTION PRICE OF THE GAZETTE.

Another important factor that should be considered in connection with effecting economies in the cost and distribution of the Official Gazette is that of its present subscription price. For the 52 issues of the Gazette which are published during the year, a subscriber pays the sum of $5. In addition to the weekly issues of the Gazette, however, each subscriber is sent, without extra cost, 12 monthly indexes, 12 copies of the "Title pages and Digest to the Monthly Volumes of the Official Gazette," and a copy of the annual index to all Gazettes published during the year. When it is taken into consideration that such a large number of publications is furnished to each subscriber for the small sum of $5 per year and that the amount received from subscribers during the last fiscal year was $15,100 as against the sum of $148,838.53 for publishing these various volumes and pamphlets, it is apparent that the subscription price now being charged for the yearly issues of the Official Gazette and its supplementary publications is wholly at variance with their actual cost and worth. Accordingly, it is deemed just and reasonable that the price to be paid for the Official Gazette should be increased to $10 per annum. In the bill "to amend, revise, and codify the laws relating to the public printing and binding and distribution of Government publications," which passed the Senate April 9, 1912, this increase was proposed, and in the light of all the facts the price of $10 should be fixed.

It is suggested that it would be of value to attorneys and inventors if there should be published in the Official Gazette a brief summary of the proposed legislation contained in those bills pending in Congress on which hearings are held by committees of the Senate or House of Representatives. Such information could be published in the Gazette in a small space, and if the publication were limited to such bills as are considered by the committees in public hearings, the use of the small space required in the Official Gazette will be fully justified.

COPIES OF PATENTS KEPT FOR SALE.

Perhaps one of the most important functions of the Patent Office with respect to publications is that relating to copies of patents that are sold. Some idea of the magnitude of this activity may be gained when it is stated that there is an output of from 10,000 to 11,000 copies of patents daily. The demand for these copies comes from persons located in Washington, who in most cases apply personally for them at the Publication Division of the Patent Office, and from a large number of persons outside of Washington who apply by mail.

As has been previously stated, the printing of patents, or rather all the work connected with publishing a patent, is performed at six different establishments. The text of a patent is printed at the

Government Printing Office; the drawings are lithographed at the Columbia Planograph Co., in Washington; the text and the drawings are sent to the Patent Office, assembled and wire stitched. After extracting the required number of copies for the different divisions and the various exchanges, the remaining copies are sent to the Publication Division to be placed on sale. Of each patent there are printed 103 copies. As is well known, the number of drawings and the number of pages of text in each patent varies greatly and, consequently, the cost of publishing each patent varies accordingly. Each page of drawings costs 50 cents for 103 copies, and the cost of composition and printing each page of text is approximately $2.60 for the 103 copies.

When the supply of a patent is becoming exhausted, the stock is replenished by the photolithographic process. This reproduction work is performed by the Sackett-Wilhelms Co., in New York City, where the entire work of reproducing the drawings and the text of a patent and wire stitching it is completed and the final work sent to the Patent Office. The cost of reproducing copies of patents is based on the number of copies ordered of each patent. If the patent is in a class which is being called for frequently, 100 copies are ordered at a cost of 52 cents a page for each page of the drawings and each page of the text for the 100 copies. If 50 copies are ordered, the cost is 60 cents a page for each page of drawings and each page of text. When it is stated, therefore, that copies of patents are sold for the uniform price of 5 cents per copy, it will be seen that the price is exceedingly low as compared to the cost of publishing. During the fiscal year ended June 30, 1912, the total cost for publishing patents was $313,623.35. As against this cost the amount received from subscribers was $945 and from miscellaneous sales, $113,863.95, the total receipts being $114,808.95. A large part of the total cost is, of course, properly chargeable to the first printing, which must be done regardless of sales of copies.

It is believed that an increase in the price of a copy of a patent to 10 cents would not be prohibitive and it is equally certain that the price would be reasonable when the cost of publishing each patent is considered.

The desirability and convenience of having a uniform fee for all copies of patents regardless of their size is evident, and while the charge of 5 cents for a copy that includes only 2 pages is excessive when compared with the same price for a copy containing 100 or more pages, it is difficult to so arrange the prices that they more nearly cover the cost of production. In the opinion of the commission the Commissioner of Patents should fix the prices within the maximum of 10 cents a copy, as now authorized law. An increase in the uniform price should be made, or if possible, a scale of

prices established to adjust the revenue from copies so that it will more nearly cover the expense involved in the furnishing of such copies.

STORAGE OF COPIES OF PATENTS.

A visit to the Patent Office clearly demonstrates the absolute necessity for more space and better equipment for filing the stock on hand of each of the 1,250,000 patents, trade-marks, and designs. At the present time the stock is scattered throughout the entire building, in the basement, on the first floor, on the third floor, and in the two galleries. The patents are filed on wooden shelves, which in themselves occupy a large amount of space, and are exposed to dust and to the great danger of fire. The need for adequate filing space in which to store the supply of all patents to be kept on hand is a matter that must be faced constantly by the Patent Office officials, since each week there are published and printed an average of about 700 patents, trade-marks, and designs, for which large additional filing space is required. It is evident that the question of filing, handling, and safeguarding this immense stock, approaching 50,000,000 copies, is one that should receive careful consideration. One of the difficulties is the lack of proper facilities for supplying daily calls made on the Publication Division for copies of patents. These calls or requests are collected at the Publication Division and each hour are sent to the 15 or more messenger boys located throughout the various sections of the building where the patents are stored. The desired copies of patents are withdrawn and taken to the Publication Division, where they are delivered to the patent attorneys or others requesting them, or mailed. This method of handling the patents is expensive and unsatisfactory. This subject of filing and handling copies of patents is discussed in chapter 8 of this report relative to the equipment needed for the efficient transaction of business.

THE REPORTS OF THE COMMISSIONER OF PATENTS.

From an examination of the contents of the three yearly reports of the commissioner, it is obvious that all the information published in them should be assembled and published in such a manner as would more properly serve the purposes for which they are intended, and at the same time avoid useless duplication in the publication of the data.

At the present time the Commissioner of Patents submits a report to the Secretary of the Interior for the fiscal year and two reports to Congress for the calendar year. The first few pages of the report for the fiscal year are devoted to information presented in statistical form relative to the number of applications received for patents,

trade-marks, and designs, and the receipts and expenditures of the Patent Office. In addition to this statistical matter, there are several pages of text pertaining to the activities of the Patent Office, together with such recommendations as the Commissioner of Patents may desire to make.

Of the two reports made to Congress, the one for the calendar year contains information of the same character that is published in the "Report of the Commissioner of Patents to the Secretary of the Interior," except that the report to Congress enters into more detail with respect to both the statistical tables and the text; and also that it relates to a period of six months which have elapsed since the submission of the report for the fiscal year.

This report to Congress for the calendar year is duplicated in its entirety in a second report to Congress for the same period of time. This second report, however, contains as additional data a list of the patentees and inventions for the same calendar year to which the report relates. This report to Congress containing a list of the patentees and inventions, therefore, is wholly an annual index of all the Official Gazettes issued during the year. Indeed, it can be stated that this report has lost entirely its identity as a report of the Commissioner of Patents to Congress and instead come to be known and regarded as the "Annual index."

It is to be noted that this report, without the list of patentees and inventions, is reprinted also in the Official Gazette soon after it is transmitted to Congress.

Without minimizing the importance of the information published n these three reports, it is evident that, in place of the three separate reports now published (one of which is a complete duplication of another) one report should be sufficient for all purposes to be served.

It is recommended, therefore, that one report be made by the Commissioner of Patents to the Secretary of the Interior and by him submitted to Congress. The report should contain only such matter as relates to the activities of the Patent Office, with such recommendations and notes as the commissioner may care to make. This report should relate to the period covered by the fiscal year inasmuch as it should contain the financial operations of the Patent Office, and thus present the necessary information required by Congress and the fiscal officers of the Government.

The information now being published in one of the reports to Congress, which constitutes the index of patentees and inventions before referred to, should appear as a separate volume and thus be what it is intended it should be, namely, an annual index of the Official Gazette.

ROSTERS OF ATTORNEYS.

For a number of years, it has been the practice of the Patent Office to compile and publish rosters of patent attorneys. The principal reason underlying the recommendation for the discontinuance of these pamphlets, which recommendation the commission makes, is that considerable objection and criticism on the part of a large number of patent attorneys has been made to the publication of information of this character. The attorneys claim that the publicity given to their names and addresses by the Patent Office subjects them to no small amount of annoyance. In addition to this objection, the publication by the Patent Office of the names and addresses of patent attorneys renders the Patent Office open to censure as being the official source of information of this kind. It is not believed the publication serves any useful purpose and if kept up to date, including as it does about 10,000 names and addresses, the cost would be large.

Finally, it is believed that information of the character published in these rosters would more properly emanate from a private publisher than from the Patent Office.

THE MONTHLY VOLUME OF THE OFFICIAL GAZETTE.

Under the general authority contained in the law which provides for the printing and distribution of publications of the Patent Office, there are bound each month 40 volumes of the monthly issue of the Official Gazette. The object of binding these 40 volumes is to meet any requests that may be made for the complete monthly issue of the Gazette in this form, and each month a requisition is made on the Public Printer by the Issue and Gazette Division of the Patent Office for this work. Of these 40 copies only 5 are used by the Patent Office, the balance remaining in the custody of the superintendent of documents to be sold at the price of $2.50 per volume. An investigation into the matter of the extent to which that official has received requests for this publication reveals the fact that the demand for this volume has not been of sufficient importance to warrant a large number of these volumes being bound each month. Of the 420 volumes placed in the custody of the superintendent of documents during the fiscal year ended June 30, 1912, only 45 volumes were sold. There is practically a unanimous opinion among the officials of the Patent Office that there is no real need or demand for its continuance. It is recommended, therefore, that this publication be discontinued.

In order to supply the needs of the Patent Office, the five copies of this volume might easily be secured through the ordinary channels of the bindery; that is, at the end of each month the Patent Office would have bound for its own use five sets of the weekly issues of the Official Gazette for the month.

CHAPTER 10.

TERM OF PATENT AND DELAYS.

TERM OF A PATENT.

The term of a patent is fixed by section 4884 of the Revised Statutes, which is as follows:

SEC. 4884. Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof.

The question of the term of years for which a patent should run is not one for consideration or recommendation by this commission, except in so far as it involves the procedure of the Patent Office and the action of applicants hindering the work of the office by delaying applications in order to receive the benefit of the term of 17 years in addition to the time taken between the beginning of manufacture and the grant of the patent.

Under the present practice applications for patents are kept secret in the Patent Office, an exception being in a case where two or more applications interfere or an application or applications interfere with an existing patent. This is considered in chapter 4 under the subject of interference procedure.

Section 4894 of the Revised Statutes as amended March 3, 1897, reads as follows:

SEC. 4894. All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

Prior to the amendment of 1897 the period for completion and for prosecution was two years instead of one year. Upon the recommendation of the Commissioner of Patents a bill was introduced into the Sixty-second Congress (H. R. 8388) May 2, 1911, to amend the law to make the period of time six months instead of one year. In the report of the Commissioner of Patents to Congress for the year ended

December 31, 1911, the commissioner gives the following reasons for recommending this change in the law:

I also respectfully recommend the passage of the bill (H. R. 8388) prepared by me and introduced and referred to the Patent Committee of each House of Congress in the Sixty-first Congress and reintroduced by Mr. Oldfield, chairman of the Patent Committee, requiring that an application for patent shall be prosecuted within six months after any action by the Patent Office. The present period within which the applicant is allowed to amend is one year, and under the existing practice there have been many instances of cases being amended just within the one-year limit in order to keep them alive, they thus serving as dragnets in many cases to catch inventions along similar lines which may be subsequently applied for, thereby involving inventors in expensive interference proceedings. It has been the effort of the office to get the old cases out of the office whenever possible consistent with good work. The office has been severely criticized recently, especially in the last year or two, for allowing applications, particularly those owned by corporations, to rest in the office for such long periods as to really have the effect of extending the patent period in case such applications are later passed to issue. Instructions have been repeatedly given to the examining corps to as far as possible get rid of all such cases as are delayed intentionally by the applicant or his attorney. Had this bill passed it would have almost entirely overcome that criticism.

The commission has given consideration to this subject and has received the opinions of a large number of attorneys and inventors as to the advisability of the proposed change. It is very doubtful whether this change in the law would prevent the practice which is complained of by which applicants may keep applications pending for a number of years before final action by the Patent Office. It is probable that a limit of six months would merely place before the commissioner for decision a large number of additional petitions for extension of time on the ground that the delay was unavoidable. The change to six months might also have the effect of increasing the work of the Patent Office, because if an applicant were intent upon delaying action he could regularly file some answer just before the six months expired.

That there is a considerable percentage of applications which are intentionally delayed by the attorney or the applicant is possible of proof. It may be true that an inventor of small means is anxious to have his application acted on as soon as possible, but even in the case of such an inventor it is not always true that he wishes prompt action, while in the case of applicants who are stronger financially it is alleged the intentional delay is not uncommon.

The following statement shows a few sample applications still pending in the Patent Office, with the number of actions made by the applicant and the average time taken for such actions:

Filing date.	Number of actions by applicant.	Average time taken by applicant.
Mar. 27, 1903	9	About 11 months.
Aug. 27, 1901	12	About 10 months.
July 21, 1897	10	17.8 months (old 2-years law).
Oct. 22, 1880	25	9 months (old 2-years law).
Oct. 10, 1902	17	About 4 months (in interference from January, 1907–April, 1910).
Feb. 10, 1902	9	12 months.
Aug. 10, 1895	10	21 months (old law).
Dec. 19, 1905	7	10 months.

The commission is of the opinion that the only satisfactory remedy for this condition, which is an injury to the public and a delay in the work of the Patent Office, is to fix the term of a patent with reference to the date of filing the application.

In a bill now pending in Congress (H. R. 23417), which was reported by the Committee on Patents of the House with a report (No. 1161) on August 8, 1912, it is proposed to amend section 4884 of the Revised Statutes by retaining the present limit of the term of 17 years and including the following provision:

> But every patent granted for an invention shall be so limited as to expire 19 years from the date of the filing in this country of the application upon which the patent was granted, exclusive of the time actually consumed by the Patent Office or the courts in considering the application, and, where the application has been involved in interference, of the actual time in which it had been so involved; and in no case shall the patent be in force more than 17 years.

The commission is of the opinion that this provision would be the cause of dispute and involve considerable work in determining the time actually consumed by the office or the courts in considering the application. It is of the opinion that the law should be amended to limit the life of a patent so that it will expire 19 years from the date of filing in this country of the application upon which the patent was granted, but adding to the 19 years such time, not exceeding 2 years, as was taken when the application was involved in interference. Such a law would give a life of 17 years or more from date of allowance to the great majority of patents granted and would give substantially the term of 17 years from date of allowance to practically all patents in which the applicants promptly prosecuted. If the applicant delays in the prosecution or allows others to delay in interference proceedings or delays in payment of the final fee, he would receive a patent which would be for a less term from date of

issue than is the case at present (17 years) as a penalty for his own negligence. This would injure no one except the applicant responsible for the delay. It is assumed, of course, that the Patent Office will be prepared to act with reasonable diligence, so that the commission believes no injustice will be done to applicants. There does not appear to be any other satisfactory way to remedy the evil of intentionally delaying applications, and it is an evil that affects the character of work done in the Patent Office and the expense of doing it.

MULTIPLICITY OF CLAIMS.

The number of claims included in an application for patent varies greatly. A few applications contain but 1 claim, the average number in an application is probably between 8 and 12, as many as 20 claims is common, and the number of claims in one patent application sometimes runs to a thousand. The multiplication of claims adds to the work of the Patent Office in many ways. The examiner must read all of them, analyze them to ascertain their scope, search each of them, apply the references thereto, treat them separately in all letters, and repeat all these operations each time the case is amended. This adds to every step of the examiner's work, to the work of the stenographer and typewriter, and to the work of the clerk in adding amendments. It also increases the cost of printing and no doubt confuses the public and the courts as to the scope of the invention.

The practice of improperly multiplying claims is without benefit to the patentee, for if his broad claim be declared invalid all claims which do not represent additional patentable inventions, but which are only allowed because they include the matter of the broad claim, must necessarily be declared invalid also.

While a large number of claims is sometimes necessary to adequately cover an invention, it is evident that the unnecessary multiplication of claims is an evil that results in extra work in the Examining Division. If it were possible to devise a plan by which the application fee could be graded so as to more nearly cover the cost to the Patent Office in each case of action thereon, it might be desirable to graduate the application fees instead of following the present method of having one fixed fee for any application. It may be difficult to arrange fees upon this basis and require a long study of all the factors involved, but the subject is worthy of consideration. At any rate, it would seem entirely practicable to discourage the filing of an unnecessarily large number of claims by a change in the law by which an additional fee would be charged for each claim included in the application or amendment in excess of a fixed number which would be covered by the regular filing fee.

It is suggested that the subject of the multiplicity of claims be given consideration with a view to finding the remedy in a change in the

practice of the office by which the authority now vested in the Commissioner of Patents will be more rigidly enforced to reduce the evil of unnecessarily multiplying claims. In this way, and possibly by a change in the fees, it is believed that substantial progress can be made in relieving the office of unnecessary work. As stated in chapter 1 of this report, this is a subject that might be covered to the best advantage on a revision at one time of the patent law and administrative procedure by changing the system which requires a more or less elaborate repetition of claims in almost identical language. Under existing conditions it is difficult for the Commissioner of Patents, when acting through nearly 400 subordinates, to equitably apply an adequate remedy.

CHAPTER 11.

FEES, REVENUES, AND EXPENDITURES.

The joint resolution under authority of which this report is made directs the commission to report "to what extent any expenditures which may be recommended can be met by increases of Patent Office fees." In compliance with this requirement the following suggestions and recommendations are submitted. The fees charged by the office and the prices of publications are shown in rule No. 203 of the Rules of Practice published in Appendix B to this report. Reference is made in this chapter to those fees only concerning which a change is recommended.

APPLICATION AND FINAL FEE.

The question as to whether or not the fee of $15 charged on the filing of an original application for a patent (except in design cases), and the fee of $20 for issuing each original patent (except in design cases) should be changed, has been discussed many times. In connection with this question there is involved the further question of whether or not the Patent Office should be self-supporting, and any increase in expenditures should be met by increasing these or other fees.

It is contended on the one hand that the application fee should not be increased, but, if anything, should be reduced in order to encourage the small inventor who is not able to pay a larger fee. While it may be true that some part of the expense of the patent system should be paid from the Treasury in addition to the revenues of the Patent Office, yet it seems reasonable that the fees charged should be in proportion to the work done and that the work should be accurately done.

There has been complaint for many years that an unreasonable number of patents are issued only to be declared invalid when taken before a court, and that this result is due to inefficiency in the Patent Office. The demand that the office shall keep its work up to date and shall proceed to examine an application within a very few months after it is filed and continue to act upon it as rapidly as the applicant submits answers to objections is a demand that is not unreasonable. To satisfy this demand, however, the number of employees in the Patent Office must increase in some relation to the volume of work, and a sufficient number of competent examiners must be employed at all times to maintain this desirable condition of prompt action.

In addition to prompt action the owners of valid patents and the public are interested in not having issued from the Patent Office any patents that are invalid. The idea prevails to some extent that in case of doubt the examiner should allow the patent on the ground that its issue does not injure the public because it is not of value until it has been determined by a court to be good. The commission is of the opinion that this idea should not prevail.

It would seem to be very desirable that the examination of applications and the decision reached should be so accurately made that the number of invalid patents will be reduced to the minimum and will represent only such number of mistakes as must happen in passing upon thousands of applications, and that difference in judgment between the officials of the office and the courts which is inevitable in the decision of legal questions. It must be remembered, also, that in a suit in court the investigation of the validity of a patent frequently occupies a long time and the court is assisted by the search made by counsel.

PROPOSED INCREASE OF FEE.

It has been suggested that the application fee should be materially increased so that it will be $50 or more. This suggestion proceeds upon the theory that the filing of applications for patents should not be encouraged to the point of flooding the office with frivolous applications or for the purpose of securing the services of the office in making a search. It is claimed as a benefit of this suggested increase that a large application fee would not only decrease the number of applications, but would pay for the time of examiners in making a thorough examination and thus eliminate a large number of patents hastily issued, which, after litigation, are found to be invalid under circumstances that indicate that a more careful search would have caused the rejection of the application.

It is certain that if the Patent Office is to be built up to a high standard of efficiency more money must be spent. It also seems reasonable that a just part of that expense, if not all of it, should be borne by those seeking patents. When a person files an application that can not be allowed, the loss of the fee is the result of his own failure to investigate the value of his alleged invention, or he is paying the fee to have the question investigated for him.

Until the Patent Office is better equipped in every way than it is at present it does not seem advisable to increase the application fee to a point that would cover the expense of better work than is possible under present conditions. It appears to the commission that during the next few years, and pending the decision of the questions of a new building, of adequate salaries, and of a larger number of examiners, and pending action to improve the method of procedure

in the Patent Office, no radical increase of fees is justified. A gradual increase in order to gradually improve the office should be made. The commission has, therefore, reached the conclusion that the application fee should be increased at the present time from $15 to $20 and that the final fee of $20 should remain unchanged. It believes, also, that further increases in the application fee should be made as rapidly as improvements in existing conditions are made, with the purpose of having in the not distant future the best possible service to inventors and the public. For such service almost any increase in fees would be justified.

APPEAL FEES.

If the recommendation of the commission for the elimination of one appeal in the Patent Office is approved, the fee of $10 on appeal for the first time from the primary examiner to the examiners in chief and the fee of $20 on every appeal from the examiners in chief to the commissioner should be eliminated and a fee of $20 be substituted for the one appeal from the primary examiner to the examiners in chief.

FEES IN DESIGN CASES.

In design cases the fees are at present—

For 3 years and 6 months	$10
For 7 years	15
For 14 years	30

In view of the fact that the work required in the office in the examination of applications in design cases is the same whether the period of protection desired by the applicant is long or short, the commission is of the opinion that a uniform filing fee should be charged. It recommends that this fee be fixed at $15; that no issue fee be required for a 7-year term; that in case the term of 14 years is desired, an issue fee of $15 be charged; and that the issuing of design patents for a term of 3½ years be discontinued.

RECORDING FEES.

The fees for recording assignments are fixed by section 4934 of the Revised Statutes, as amended May 27, 1908. The original section made the maximum fee $3, and this applied to any paper of over 1,000 words. On account of the fact that many deeds included a large number of patents and many thousands of words, the maximum fee of $3 for recording was entirely inadequate to cover the cost to the office. The statute as amended reads as follows:

> For recording every assignment, agreement, power of attorney, or other paper, of three hundred words or under, one dollar; of over three hundred and under one thousand words, two dollars; and for each additional thousand words or fraction thereof, one dollar.

As thus amended the charge is one based strictly on the number of words contained in the paper and takes into consideration the work imposed upon the recording office only to that extent. When a large number of patents is included in one deed, and in one instance a corporation did include in one writing 1,047 patents, the fee for recording the instrument is wholly inadequate to pay for the necessary work, which includes not only the recording, but indexing and digesting the information as to the assignment of each patent. This work is necessary in order that the ownership of a patent may be traced in the records of the office.

It is probable that the original statute contemplated that an assignment would not include more than one patent. The amendment made in 1908 did not go far enough. It is suggested that for recording an assignment an additional charge should be made, based upon the number of patents, applications, or inventions that may be included in the single instrument. The commission therefore recommends that the fee bill covering the recording of these instruments be amended to read as follows:

For recording every assignment, agreement, power of attorney, or other paper relating to a single invention, application, or patent, of three hundred words or under, one dollar; of over three hundred words and under one thousand words, two dollars; for each additional thousand words or fraction thereof, one dollar; and for each additional invention, application, or patent included in one writing, twenty-five cents.

TRADE-MARK FEES.

No change is recommended in the fees charged in connection with the registration of trade-marks excepting that if the recommendations of the commission as to one appeal in the office are approved, the fees applicable to appeals from the examiner in charge of trade-marks and from the examiner in charge of interferences will be the fees charged on appeals from those officers to the board of examiners in chief instead of to the commissioner.

SALE OF THE OFFICIAL GAZETTE AND COPIES OF PATENTS.

Recommendations concerning changes in the sale price and the subscription price of the Official Gazette and in the price of printed copies of patents are contained in chapter 9, where the subject of publications is considered.

PAYMENT OF FEES.

The method of paying patent fees and of refunding amounts paid through mistake is contained in sections 4935 and 4936 of the Revised Statutes, as follows:

SEC. 4935. Patent fees may be paid to the Commissioner of Patents, or to the Treasurer, or any of the assistant treasurers of the United States, or to any of the designated depositaries, national banks, or receivers of public money, designated by the Secre-

tary of the Treasury for that purpose; and such officer shall give the depositor a receipt or certificate of deposit therefor. All money received at the Patent Office, for any purpose, or from any source whatever, shall be paid into the Treasury as received, without any deduction whatever.

SEC. 4936. The Treasurer of the United States is authorized to pay back any sum or sums of money to any person who has through mistake paid the same into the Treasury, or to any receiver or depositary, to the credit of the Treasury, as for fees accruing to the Patent Office, upon a certificate thereof being made to the Treasurer by the Commissioner of Patents.

In the payment of fees it is found that during the calendar year 1912 less than 3 per cent, or $53,083.65, of fees came to the Patent Office through deposit with the Treasurer of the United States, or assistant treasurers, or designated depositaries, the remaining 97 per cent, or $1,966,304.38, being remitted directly to the Patent Office. In view of the facilities now existing for remitting money, it is suggested that section 4935 should be amended so as to require all fees to be remitted to the Patent Office, thus doing away with the deposit in depositaries.

REFUNDMENT OF FEES.

Notwithstanding the positive provisions of sections 4935 and 4936, it was the practice of the Patent Office to make refunds through the financial clerk to persons making payment by mistake and not to have such refunds made by the Treasurer of the United States upon a certificate of the Commissioner of Patents. In November, 1911, the matter being brought to the attention of the Comptroller of the Treasury, that officer decided that the practice was in violation of the statute, and since that decision refunds have been made by the Patent Office furnishing a list to the Auditor for the Interior Department, who issues his certificate of settlement, and the Secretary of the Treasury draws a warrant to each person entitled to a refund. Such warrants are sent through the regular channels of the Treasury Department and mailed to the applicant. The decision of the Comptroller of the Treasury is published in full in Appendix I to this report.

Upon inquiry it was ascertained that during the eight months that the practice of making payment to each individual by warrant from the Treasury has been in effect, there have been 4,000 warrants issued, or at the rate of 6,000 a year. These 4,000 warrants aggregated $8,316.43, or an average of about $2.08 each. While the average amount of a warrant is $2.08, there were 3,050 of the 4,000 that were for $1 or less each, while the number of warrants for 5 cents each runs into the hundreds.

In view of the fact that the cost of making a direct settlement by the auditor and the issue and payment of a warrant through the Treasury is conservatively estimated at $1, it will be seen that while the practice established under the ruling of the comptroller conforms

to the requirements of the law, the expense is out of proportion to the benefits.

It is recommended by the commission that the law be amended so as to authorize refundments to be made by the financial clerk out of the appropriation created by section 4936 and his accounts for such refunds be settled by the auditor as are his accounts of receipts.

RESULT OF PROPOSED CHANGES IN FEES.

If the recommendation herein made concerning a change in the fee charged upon the filing of an application for a patent is approved, and the law is amended accordingly, it is the opinion of the commission that the revenues of the office will be increased about $200,000 per annum. While the increase in this fee may result in some reduction in the number of applications filed, which is now about 68,000 per annum, or at least tend to prevent the usual annual increase of 5 or 6 per cent, the estimate of an increase in revenue of $200,000 is based upon the filing of only 61,000 applications a year, and it is not believed that the number would be reduced to that extent.

While a small reduction in the number of applications would affect somewhat the number of patents granted, and thus affect the revenue arising from the final fee of $20, it is not believed that the increase in the filing fee will materially affect the revenue from final fees, in view of the fact that so many allowed applications do not result in issued patents because of failure to pay the final fee. Any decline in the number of patents actually issued will, of course, also reduce the expense involved in the issue of patents and in their printing and distribution.

As a result of the clause in the appropriation act of August 23, 1912, discontinuing the publication of the monthly volume of specifications and drawings, it is estimated that an annual saving of $50,000 will result. This saving, combined with the annual excess of revenues over expenditures, amounting in the fiscal year 1912 to $75,264.06, and the estimated increase in revenues from changes in fees recommended in this chapter, will more than cover the increase in current expenses of the office to be caused by the increase of force and increases of salaries recommended in chapter 7 on Personnel. These increased revenues and decreased expenditures will justify also more liberal appropriations for equipment, books, etc., without the expenditures exceeding the revenues.

While the fact that more than $7,000,000 have been paid in Patent Office fees during the past 76 years in excess of the cost of running the Patent Office may not be a good argument for providing a new building for the Patent Office or for increases in salaries or other expenses, it seems to the commission that conditions regarding the present methods of issuing patents are such that all the current reve-

nues, including all increases in revenues due to increases in fees, should be applied, as far as necessary, to improving the conditions under which the Patent Office work is done, which, it is generally believed, are in great need of improvement.

It has not been the policy of the United States to make the Patent Office a source of revenue for the general expenses of the Government, and unless that policy should be adopted, as it has been in some foreign countries, the fees charged should be increased only to such extent and as rapidly as is necessary in perfecting the work of granting patents. When a better patent can be issued, as a result of an almost perfect examination, the fee should be equal to the cost then incurred.

CHAPTER 12.

MISCELLANEOUS.

In this chapter reference is made to two bills pending in Congress to make changes in the law relating to the authority to issue certificates to correct errors in letters patent and to require extra copies of drawings to be filed with an application.

CORRECTION OF ERRORS IN LETTERS PATENT.

There is now pending in Congress a bill (H. R. 7710, 62d Cong., 1st sess.) to amend section 4916 of the Revised Statutes by adding at the end of the section the following:

> The commissioner is hereby authorized to issue a certificate of correction in conformity to the records and files of the Patent Office whenever, in his opinion, a patent issued by the Patent Office does not conform to the records and files of that office. Such certificate shall be signed by the Commissioner of Patents, sealed with the seal of the Patent Office, indorsed upon the patent, recorded in the records of patents, and a printed copy thereof attached to each printed copy of the specification. Every patent so corrected shall have the same effect and operation in law on the trial of all actions for cause thereafter arising as if the same had been issued in such corrected form.

The advisability of legislation along this line has been urged by several Commissioners of Patents. In the annual report of the present commissioner for the year ended December 31, 1911, he makes the following recommendation concerning this bill:

> Experience has shown that because of errors, either committed in this office or the Government Printing Office, the printed patent as issued does not always correspond with the record thereof as filed in this office. The error may be one of punctuation, technical words may be misspelled, and other mistakes may occur which are inevitable when it is necessary to make a printed reproduction of copy which is technical in its character and which oftentimes is very much confused because of the many amendments which have been made thereto. It has long been the practice of the Patent Office to issue certificates of corrections where the mistakes do not constitute a sufficient ground for reissue. Inasmuch as these certificates do not have the positive sanction of law objection is frequently made to them. Many times the office is put to the expense of a reissue to correct a mistake which could just as well be corrected by a certificate of correction at much less expense to the Government.

The commission, after consideration of this subject, is of the opinion that the practice which has obtained in the office of issuing certificates of correction should be ratified by the passage of a bill like that referred to, so that in the future there will be no question concerning the authority of the commissioner in the premises.

EXTRA COPIES OF DRAWINGS.

In the present Congress a bill (H. R. 7711) was passed by the House of Representatives February 22, 1912, providing that section 4889 of the Revised Statutes shall be amended so as to require an applicant to furnish such additional copies of drawings accompanying an application as the Commissioner of Patents may prescribe. The bill has not yet been acted upon by the Senate. The Commissioner of Patents, in his report for the year ended December 31, 1911, states the reasons why additional copies of drawings should be filed, as follows:

This bill provides for the amendment of section 4889 of the Revised Statutes and is aimed to safeguard applications for patent from possible mutilation or fraudulent amendment during the pendency in the Patent Office. Certain changes in the phraseology of the statutes are provided by the bill; but the really essential provision is that there shall be required to be filed with an application for patent, in addition to the drawing, two photographic copies of such drawing. This imposes upon every applicant for patent an additional statutory requirement, to wit, to file with each application of which a signed and attested drawing forms part two photographic copies of such signed and attested drawing.

The purposes of this requirement are (1) to guard against and enable the detection of unauthorized changes in the original drawing or abstraction of such drawing and substitution of another; (2) to lessen the danger of serious mistakes on the part of the office in failing to detect interferences between copending applications for the same invention.

It is proposed to accomplish the first purpose by causing to be filed in secret archives, in charge of the chief draftsman, one of these photographic copies, which may serve as a permanent standard of comparison with the pen-and-ink drawing from which the copies that form a part of the patent are taken. At present the drawing when sent to the attorneys' room upon request of any one appearing of record as having an interest in the application might be changed or abstracted and replaced by a corrupt attorney or employee of the Patent Office, leaving no evidence, or at best negative indications, that any unauthorized changes have been made. An illuminative example of what unauthorized changes may be made is found in the case of the Heany patent, No. 872936, where no drawing was filed originally with the application, but one was filed subsequently, which was later abstracted and replaced by another of entirely different character, the last drawing being the one which now forms a part of the patent. If at the time the Heany application was filed all applicants had been required to file photographic reproduction of the drawing, the changes could hardly have been made without detection, except by the collusion of two or more employees and with great difficulty.

It is proposed to accomplish the second purpose by retaining the second photographic copy of the drawing in the file wrapper and sending it with the file to the attorneys' room, upon order, or to any other division or any tribunal of the Patent Office, when required, leaving the original drawing in the examining division where the application is classified for examination, or if for any reason it should become necessary to send the original drawing out of the examining division the photographic copy could be retained therein, where it would be discovered in interference searches. Under the present procedure both drawing and file wrapper are sent out of the division on attorneys' orders, also when they are placed in interference or are appealed, and the drawing is frequently sent out on orders of the official draftsman or the chief of the

Copy and Manuscript Division for extended periods, amounting in interference proceedings to years. While the drawing is out of the examining division interferences between the application of which it forms a part and other subsequently filed applications may be overlooked, as the interference search is made by means of the drawing. The memory of the examiner can not always be relied upon to recall interfering applications, especially as the personnel of the force changes continually.

The size of the sheets upon which the proposed photographic copies shall be made, their character and disposition, may be left to the discretion of the Commissioner of Patents, who may prescribe, subject to the approval of the Secretary of the Interior, all proper requirements, by rule, under the authority of section 483 of the Revised Statutes.

It is very clear that it is desirable for applicants filing applications for patent to accompany the same with photographic copies of the drawings. This has been the opinion of my predecessors in office. Commissioner Butterworth issued an order to this effect, but subsequently revoked it because he was convinced that he could not legally enforce that order without statutory authority. The recent developments in the Patent Office in regard to the tampering with patent records makes it essential that the statute be amended as requested, so as to give statutory authority to the requirement for the photographic copies. It may be said, however, that this is the first time that the records of the Patent Office have been tampered with during its history, covering a period of 121 years, and it is the only patent so tampered with in more than 1,000,000 patents which have been granted by the United States to date.

In connection with the inquiry to obtain the views of attorneys and others upon the questions being investigated by the commission, they were asked concerning this proposed legislation. There is no question that in the case of many inventors in different parts of the country it would be some trouble to furnish photographic copies of drawings. On the other hand, there would be a benefit to the Patent Office, as pointed out by the commissioner, in having these additional copies available not only as a guard against fraud but as a convenience in the work of the office.

It has been suggested that if additional copies are needed by the Patent Office they should be made by photographic or other process upon receipt of the application. The commission recommends the passage of such a law as that referred to. It is of the opinion, however, that if he prefers to do so, the applicant should be allowed to file his application without the extra copies and pay to the Patent Office the cost of making copies.

CHAPTER 13.

VIEWS OF PATENT ATTORNEYS.

In many chapters of this report the commission has referred to the inquiry which it addressed to members of the bar, inventors, and others interested in matters coming before the Patent Office. More than 400 replies have been received, a number coming as this report was being written. The care shown in the preparation of answers to the questions submitted is evidence of the desire of many attorneys and inventors to have the Patent Office improved. The commission is indebted to many attorneys for their full discussion in letters and papers of questions in which they were particularly interested.

For reasons stated in the circular letter sent out by the commission, questions relating to building accommodations and equipment were not asked.

It is regretted that the time at the disposal of the commission, to make the investigation and formulate a report to be submitted to Congress not later than December 10, 1912, was not sufficient to justify it in making recommendations upon all the issues raised by the replies received or, in fact, upon all the questions arising in the course of the separate study made by it in the Patent Office. The suggestions offered in response to its circular letter, and the facts developed by it, will be available, however, to Congress, or for use in any further investigation that may be made of the subject.

The circular letter and blank form sent with it are here given:

LETTER TO ATTORNEYS, AGENTS, AND INVENTORS.

THE PRESIDENT'S COMMISSION ON ECONOMY AND EFFICIENCY.

THE WHITE HOUSE,
Washington, October 31, 1912.

To attorneys and agents practicing before the United States Patent Office, and inventors:

Pursuant to the joint resolution approved August 21, 1912, "Requesting the President to cause an investigation of the Patent Office and make a report with recommendations to Congress," the President has directed the Commission on Economy and Efficiency to undertake the investigation and prepare the report. A copy of the resolution is inclosed.

The commission recognizes the interest of the public in this inquiry, and particularly the interest of inventors and their attorneys and agents. We shall be glad to receive from you any criticisms and suggestions for improvement you may wish to offer with reference to the subjects of inquiry so far as they relate to the present methods and personnel; what changes in law are necessary to enable the office to discharge

its functions efficiently and economically; and to what extent any increased expenditures may be met by an increase of fees.

A blank form is inclosed herewith. One copy of the blank may be returned in the inclosed envelope, with your answers to such questions as you may wish to answer, the other copy being intended for your files. Suggestions not covered by the questions may be made on a sheet to be attached to the blank. Such subjects as the need for additional and better building accommodations and equipment may be commented upon in this manner although the specific questions do not cover these points, as it is thought the need for improvement in these particulars is obvious.

The purpose of the commission is to afford an opportunity to members of the bar to render assistance in the investigation, which, it is to be noted, does not relate to the general patent law, but only to the law governing the administration and procedure of the Patent Office. For this reason the inquiry is limited to the subjects referred to in the resolution.

If you wish to answer the questions or to submit any other criticisms or suggestions, it is requested that your reply be made at an early date, as the time for completing the investigation and preparing the report is limited. It is not expected that the replies to this inquiry will be published, but it is intended to present in summary form, so far as it is practicable, the views of inventors, and of attorneys and others practicing before the Patent Office, upon the several questions upon which this commission will report.

THE PRESIDENT'S COMMISSION ON ECONOMY AND EFFICIENCY.

[PUBLIC RESOLUTION—NO. 55.]

[H. J. Res. 337.]

JOINT RESOLUTION Requesting the President to cause an investigation of the Patent Office and make a report with recommendations to Congress.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States be, and he is hereby, requested to cause the accountants and experts from official and private life now or hereafter employed in the inquiry into methods of transacting the public business of the Government in the several executive departments and other executive Government establishments, known as the Commission on Economy and Efficiency, to investigate fully and carefully the administration of the Patent Office with a view of determining whether or not the present methods, personnel, equipment, and building of said office are adequate for the performance of its functions, taking into consideration the present character and volume of business, and also such increase in complexity or volume as may reasonably be expected in the future, and to ascertain and recommend specifically to Congress not later than December tenth, nineteen hundred and twelve, what changes in law, what increases in appropriations, and what additional building accommodations, may be necessary to enable the Patent Office to discharge its functions in a thoroughly efficient and economical manner, and to what extent any expenditures which may be recommended can be met by increases of Patent Office fees.

All expense incurred in carrying out the purposes of this resolution shall be paid out of any funds in the Treasury of the United States not otherwise appropriated, and the sum necessary for said purposes is hereby appropriated: *Provided*, That the total expense authorized by this resolution shall not exceed the sum of ten thousand dollars.

Approved, August 21, 1912.

LIST OF QUESTIONS SENT OUT BY THE ECONOMY COMMISSION.

INVESTIGATION OF THE UNITED STATES PATENT OFFICE.

[This blank, when filled out and signed, to be returned to the President's Commission on Economy and Efficiency, Washington, D.C. Answers requiring more space than is provided should be placed on sheets to be attached.]

Question.	Answer.
Procedure:	
1. Do you consider that abolishing one appeal in the Patent Office would be beneficial?	
2. If so, do you favor having the one appeal from the primary examiner to a board of appeals, consisting of the highest officials in the office, such board to consist of five or six members, three to be a quorum?	
3. If you think it inadvisable to continue the present system of two appeals within the office, and do not favor the board of five or six to hear appeals from the primary examiner, what procedure do you think is best?	
4. What changes, if any, do you think should be made in the procedure in interference cases?	
5. Should interference cases be eliminated from the Patent Office by a change in the law, and the questions settled in the courts after the patent issues?	
6. Should the decision of the Patent Office on the question of priority of invention be made by law subject to review only on the appeal to the Court of Appeals of the District of Columbia?	
7. Do you favor the bill pending in Congress which requires that an application for patent shall be prosecuted within six months after any action by the Patent Office instead of within one year, as at present?	
8. Do you favor making the life of a patent 19 years from date of filing application?	
9. Do you favor a change in procedure so that the decision of the primary examiner to allow a patent to issue may be reviewed by the board of examiners in chief, or other board of appeals that may be created in the office, when such review may be ordered by the Commissioner of Patents? Do you favor any plan for review?	
10. What change, if any, in Patent Office procedure is needed to reduce the scope of patentability?	
11. Do you favor the enactment of the bill now pending in Congress for the amendment of section 4889 of the Revised Statutes, to require that there be filed with the application for patent, in addition to the drawing, two photographic copies of such drawing?	
12. Do you favor the passage of the bill now pending in Congress to legalize the issuance of certificates of corrections in patents?	
13. State what change, if any, is advisable in reference to the appeal now allowed from the Patent Office to the Court of Appeals of the District of Columbia	
14. To what extent should the decision on such appeal operate as a final adjudication of patentability?	
Personnel:	
15. Do you consider it necessary to the improvement of the efficiency of the Patent Office that the salaries paid to the higher officials and to the examining force be increased? If so, why?	
16. Do you consider it necessary that the number of examiners be increased, particularly with reference to the work of reclassifying patents, the digest of publications, and the providing of every facility to simplify and make more accurate the search?	
Publications:	
17. What changes, if any, should be made in the Official Gazette and other publications, and wherein are the methods of handling publications, including copies of patents, subject to criticism?	
18. Should bills affecting the patent law, on which hearings are held before the Patent Committees of Congress, be published in the Official Gazette?	

LIST OF QUESTIONS SENT OUT BY THE ECONOMY COMMISSION—con.

INVESTIGATION OF THE UNITED STATES PATENT OFFICE—continued.

Question.	Answer.
Fees:	
19. What changes, if any, do you think should be made in the application fee and the final fee?	.....
20. Where an assignment covers more than one patent, should there be an additional fee for each patent in addition to one?	.....
21. If the expenses of the Patent Office are not to exceed the revenues from fees, and a larger annual appropriation than is now made is necessary (to provide a sufficient number of examiners, to pay the examining force adequate salaries, and to make the office more efficient), would an increase of the application fee from $15 to $25, and a reduction of the final fee from $20 to $15, be justified?	.....
22. What criticisms, if any, have you of fees of the office other than the fee for filing an application for patent and the final fee?	.....
Trade-marks, prints, and labels:	
23. What changes, if any, should be made in the laws or procedure of the Patent Office with reference to trade-marks, prints, and labels?	.....
Court of Patent Appeals:	
24. While the subject is not covered by the resolution of Congress, the commission will receive such comment as you may wish to make upon the bill pending in Congress for the creation of a Court of Patent Appeals to have the jurisdiction in patent causes now exercised by the Circuit Court of Appeals	.....

November ....., 1912. Signed: .....
Address: .....

Upon a study of the answers received in response to its request, the commission was impressed with the difference of opinion among patent attorneys concerning each subject included in the question blank. While it is impossible to state accurately the consensus of opinion on any of the subjects, yet the diversity of views expressed was helpful in many ways. It gave to the commission an idea of the complexity of the problem; of the necessity for great care in making recommendation in a matter in which large interests are involved; of the impossibility of reporting, in a short time and in a final manner, on all phases of the inquiry; and of the reason why Commissioners of Patents have not made radical changes in procedure upon suggestions from within or without the office although such changes may have appeared desirable in the interest of good administration.

It has been difficult to summarize the answers in a reasonable space and in a satisfactory manner, but the following summary is published to give some impression of the views submitted, and the diversity of opinion that exists concerning all proposed changes:

SUMMARY OF ANSWERS.

Questions 1, 2, and 3, asking opinions as to the advisability of abolishing one of the two appeals in the office and creating one appeal board of five or six members, were answered in the affirmative in about 80 per cent of the replies. The direct negative to these questions was less than 20 per cent. The trend of the opinions expressed lies toward a single appeal to a board in the office, particular stress being laid on the importance of having the work of the primary examiner performed in a thorough and capable manner. Various suggestions as to the number of members on the board of appeals were submitted, preferences being for from three to seven. Some recommended, but the great majority opposed, the sitting of the commissioner, the assistant commissioners, or any administrative officer on this board, the idea being expressed that the commissioner should be left free to devote his time to administrative duties. A court of patent appeals is suggested, to be located in Washington, but to travel in circuit to try validity and infringement cases, with appeals direct to the United States Supreme Court. Several suggest the creation of two appellate boards, giving as their reason that there is more work in the office than one board can handle. A number recommend that the decision of the board in the Patent Office be final; some that the board should handle interference cases on appeal, but oppose the one appeal idea as to ex parte cases. Others think that the board should be abolished and appeal made directly to the commissioner; that a greater uniformity in standard be adopted in the office; that an opportunity for public opposition be given in all appeal and interference cases; that there be a tribunal to pass on questions of practice, whose decisions shall not be reversible; that the system of appeal be changed to grant an appeal to the United States circuit court of appeals within the circuit of residence of the applicant. A board of appeals entirely independent of the office is suggested; also that a board should be created to raise and determine the question of patentability in all cases; that the Patent Office be divided into four divisions—administrative, recording, legal, and technical; that the appeal fee be increased to $40 in case of appeal to the commissioner.

Of those replying as to what changes, if any, should be made in the procedure in interference cases; as to whether interference cases should be eliminated from the Patent Office and the questions settled in the courts after the patent issues, and as to whether the decision of the Patent Office on the question of priority of invention be made by law subject to review only on the appeal to the Court of Appeals of the District of Columbia, contained in questions 4, 5, and 6, about 15 per cent stated that no changes were desirable; about 10 per cent that interference cases should be eliminated

from the Patent Office; about 50 per cent that they should not be eliminated; and as to whether the decisions of the Patent Office on questions of priority of invention be subject to review only on the appeal to the Court of Appeals of the District of Columbia, about 30 per cent answered in the affirmative and about the same number in the negative. Suggestions were made to the effect that only one appeal should be had in the Patent Office, and that less technicality be practiced in taking of testimony. The abolishment of many interlocutory motions and motions to transmit the case to the principal examiner was suggested, thus leaving such questions to the decision of the examiner of interferences. Further recommendations were: To increase the number of such examiners to facilitate the work; cause the losing parties to pay the costs; allow an appeal from the decision of the examiner dissolving interferences on any of the four grounds of rule 122; limit the number of counts; direct decisions to the merits and not to form; the decision of patentability should not be permitted; that parties first file preliminary statements and then have access only to the drawings, specifications, claims, but not to dates; eliminate the expense of printing the record and briefs; abolish interference proceedings entirely; shorten the time for taking testimony; abolish the practice of the examiners suggesting claims from one application to another; junior applicant should be made to file his preliminary statement before interference declaration, and should not have access to senior party's case when defeated on the record; claims not in issue should not be disclosed to contending parties; stringent punishment for perjury; interference tribunal to be composed of three members; that the office make certain the issues are patentable and that there are no other pending applications which properly could be placed in the contest; the testimony should be governed by the rules in equity of the United States courts; there should be no appeal from the decision of the board except as ancillary to an appeal on the matter of priority. This change of procedure would have the effect of shutting off many motions and would avoid the present objections that the primary examiner is often called upon to review his own decisions on substantially the same facts; have examiner of interferences review action of primary examiner before interference is declared; substitute opposition proceedings for interference; require the examiner to formulate the issue in one count, if possible, leaving the parties to present evidence as to what they have invented without limitation to specific claims or counts; motions to dissolve should be made by the examiner of interferences; decision of the Patent Office in interference cases to be final and only to be opened in court upon new evidence found, as the proceedings are far less expensive in the office than in the courts; validity should be determined before the patent is issued; the question of priority should be left to the United States courts with

appeal to the court of patent appeals; establish a court of interference appeals; appeals to the courts should be only on questions of law, it being left to the Patent Office to specialize on questions of invention and priority.

Question No. 7 relating to the bill pending in Congress which requires that an application for patent shall be prosecuted within six months after any action by the Patent Office instead of within one year as at present, was approved by about one-third and opposed by about two-thirds of those answering. Some qualified their answers, being in favor if the examining corps were increased; some claimed that it would increase the number of "snap" actions; that it would result in hardship particularly where distances were very great; that the reduction of time would not cure the trouble; that examiners should have power to fix a time limit for amendments of a formal nature; six months is not enough time to perfect an invention after filing; proper prosecution would be impossible in many cases; time limit subject to the discretion of the commissioner upon proper showing.

Answering question No. 8 as to making the life of a patent 19 years from date of filing the application, more than one-third answered in the affirmative and less than two-thirds answered in the negative; some suggested making it 20 years instead of 19. Other suggestions were: Limit the prosecution of the application to a period of two years exclusive of delays due to interferences and appeals; the change would be damaging to those who are delayed by interference proceedings; in developing great systems a limitation of this kind would be ruinous; deduct time consumed in office.

In answer to question No. 9 as to a change in procedure so that the decision of the primary examiner to allow patent to issue may be reviewed by the board of examiners in chief or other board of appeals that may be created in the office when such review may be ordered by the Commissioner of Patents, and asking opinions as to any other plan for review, less than one-fourth answered in the affirmative and about half answered in the direct negative. It was suggested that a bulletin be issued to point out common errors to the different examiners; that the service of the courts is sufficient; that it is an unnecessary expense and it is the duty of the commissioner; that it will not prevent inadvertent issues and a review should be had before formal allowance notice; that the claims should be published in the Patent Gazette and the record opened to the public; that the review should be by a board of allowance; that the examiners are sufficiently competent; that the plan would cause only further delay and expense; that all patents should go to a board of experts; that the plan would too often be used to defeat justice; that such an act would be an encroachment upon the authority of the commissioner; that the German way should be adopted and the patent be laid open for opposition; that the review should be only in contested cases.

In answer to question No. 10 as to what change, if any, in Patent Office procedure is needed to reduce the scope of patentability, about a third answered that no changes in this line are necessary and some answered to the effect that better searches and classification were necessary; that the allowance of claims without regard to scope is important as simple improvements are often useful; that the scope of patentability should be extended; that there should be a well-considered analysis of patent decisions in the courts from which to derive an objective criterion for the determination of the question of patentability; that the office put upon printed record in the case its references before allowance; that at the present time too many inventions of commercial value are rejected because they are held not patentable over some absolutely impracticable device discovered in the archives of the past and which are never put to any practical use for anybody; that references of inventions should not be picked from any and every art by examiners for declaring an invention non-patentable when they have no bearing upon the invention under consideration; that the number of claims in a small invention should be limited.

There were about 25 per cent who answered directly in the affirmative and 50 per cent directly in the negative as to question No. 11 concerning the advisability of the passage of the bill now pending in Congress for the amendment of section 4889 of the Revised Statutes, to require that there will be filed with the application for patent, in addition to the drawing, two photographic copies of such drawing. The preponderance of opinion was to the effect that the drawings should be furnished but that the work should be done by and at the expense of the Patent Office. Some suggest that one copy will be enough; that the office should make the copies even though the inventor be required to pay for the same; that the Patent Office was in a far better position to make these photographic copies than the applicant.

In answer to question No. 12, 75 per cent of the opinions received were in favor of the passage of the bill now pending in Congress to legalize the issuance of certificates of corrections in patents. A small number were not in favor of this bill. Some favored the idea but not the bill itself.

In reference to question No. 13 as to what change, if any, is advisable in reference to the appeal now allowed from the Patent Office to the Court of Appeals of the District of Columbia, a good proportion of the answers advised no change; a larger number advocated the creation of a court of patent appeals; some recommended abolishing the appeal to this court; some that the cost of printing the records should fall on the losing party; that the right should be given to appeal on questions of practice and the interpretation of the rules of practice and interlocutory matters; that appeal be allowed on facts

as well as law; that records be certified up without cost to the applicant; that definite dates be fixed, so that counsel need not wait; that all matters affecting patent validity be considered; that the record in the Patent Office should be received and used without expense.

Answering question No. 14, to what extent should the decision on such appeal operate as a final adjudication of patentability, a small number answered that the decision should be final and a few that it should not be final. Some favored it being final only as to adverse decisions. Other suggestions were: It should be final, but not as against newly discovered prior art, in case of litigation under the patent; in all cases excepting where Supreme Court allows certiorari; should not be limited to one court; the courts must have the power to hold patents invalid in view of proper evidence; should be final if public has opportunity for opposition; no decision ex parte should act as a bar to consideration of same question inter partes; no objection if reviewable by bill in equity; favor recommending back to the Patent Office what the court considers novel and allowable in any case appealed; the office searches are not complete and should not be conclusive; could not fail to work injustice; final adjudication of patentability should only be vested in proposed court of patent appeals; should be final as to the grant of patents only.

Answering question No. 15, as to whether it is considered necessary to the improvement of the efficiency of the Patent Office that the salaries paid to the higher officials and to the examining force be increased, and, if so, why, three-fourths of the answers were in the affirmative, giving as their reasons, in most cases, that higher salaries would secure a better class of men and retain them in the positions. A small number of replies opposed an increase on the ground that the salaries received were as high as the parties could get elsewhere.

Answers to question No. 16, as to whether it is thought necessary that the number of examiners be increased, particularly with reference to the work of reclassifying patents, the digesting of publications, and the providing of every facility to simplify and make more accurate the search, approximately 75 per cent answered in the affirmative and a very few directly in the negative.

Question No. 17, asking what changes, if any, should be made in the Official Gazette and other publications, and wherein are the methods of handling publications, including copies of patents, subject to criticism, was answered by about 25 per cent with the statement that no changes were thought necessary. Some of the replies suggested that the previous practice of publishing all the claims be restored; that printed copies of patents in the office be kept on hand and not be allowed to get out of print; that copies of prior patents be forwarded with the rejection of claims on references; that a separate publication devoted to trade-marks and labels, including court

decisions on unfair competition, etc., would be popular with manufacturers and jobbers; that there is too much delay in filling orders for copies of patents; that bound volumes of the Gazette should be supplied to State libraries and courts within six months after publication; improve the indexes; all decisions should be published; references cited should be published; discontinue the Gazette; number of claims allowed should be stated; digest of inventions should be printed instead of first five claims; introduce an editorial page through which higher officials can get in closer touch with inventors and attorneys; should publish all court decisions and all new laws; copies of patents should be mailed unfolded; a digest of decisions of proposed board of appeals and court of patent appeals should be published; publish more commissioner's decisions; get out indexes more promptly; select better drawings for Official Gazette, showing more particularly the invention; improve the patent copy selling department; publication of digest of leading classes of patents is very desirable.

Question No. 18—Should bills affecting the patent law on which hearings are held before the Patent Committees of Congress be published in the Official Gazette?—was answered in the affirmative by practically three-fourths, with but a very small number in the negative. A few suggested that a copy of each bill should be mailed to each registered attorney; that bills should be published separately; that it would be better to give a brief synopsis; that the laws only be printed; that a digest be published with information as to how to get copies of the bills.

In answer to questions Nos. 19, 21, and 22 nearly one-half of the replies recommended no change in the fees whatever. A majority recommended the increase of the final fee and not the filing fee. In fact, three-fourths were opposed to the increase of the application fee and a reduction of the final fee as suggested in question No. 21. Some of the replies received suggested filing fees from $5 up to $25 or $30, and a reduction of the final fee from its present amount anywhere down the scale to actual cost.

Answering question No. 20, as to whether or not when any assignment includes more than one patent there should be an extra fee for each patent in addition to one, about one-fourth answered in the affirmative and nearly a half in the negative. Some suggested increasing the fee, such increase to be regardless of the length or number of patents. The Canadian plan of having the assignment sent in duplicate and filing one copy in the office was also suggested. It is not believed the purpose of the question, as stated in chapter 11 of this report, was understood generally.

In answer to question No. 22, as to what criticisms, if any, were to be made of the fees of the office other than that for filing an application for a patent and the final fee, nearly one-half replied that they

had no criticisms to make. Some suggested that the fees are extravagant; that the reissue fee should not all be paid in advance; that in case of a second appeal the fee should be reduced to $15; that the consular fee be reduced to 50 cents; that fees on interference pleadings should be imposed; that appeal fees should be refunded when appeals are successful; one term and one fee for design patents; labels and trade-marks have the same fees as designs; the first fee on all design patents should be uniform; that the fees for copying in the office are excessive; that the appeal fee from the examiners in chief to the commissioner should be reduced; that a registration fee should be charged attorneys or an annual license fee in lieu thereof. Some suggest that appeal fees might be increased; others that a filing and final fee for designs and trade-marks be provided.

In answer to question No. 23, as to what changes, if any, should be made in the laws or procedure of the Patent Office with reference to trade-marks, prints, and labels, less than a fourth of the answers stated that no changes were suggested. Others suggested that one class be made for the same with the same fees; allow two years' use of prints and labels prior to the loss of rights; an applicant who has used any trade-mark or name exclusively for ten years should be entitled to registration; anything should be registered as a trade-mark that is not indecent which applicant desires to register; the law should permit registration of many words now held to be descriptive, but which are merely suggestive; labels and prints should be under the trade-mark law and not treated as copyrights; would amend the law to include protection for trade names, advertising devices, or forms not now protected; more time should be allowed for filing oppositions; abolish protests, interferences, publishing, etc., issue the mark and leave to the court for review on suit; should involve registration without examination; the appeals should be to a board in the office; simplify procedure; increase the number of classes and provide so that similar marks may be registered in the different classes; jurisdiction as to appeals should be vested in a court of patent appeals; should be an alphabetical index of all trade-marks; have the mark registered without passing on the merits; abolish trade-mark interferences; standardize actions in Trade-Mark Division; provide for extension of 3½ and 7 year design patents to the full term of 14 years; transfer the Trade-Mark Division to the Department of Commerce and Labor; transfer prints and labels to Library of Congress; better indexing.

Concerning question No. 24, as to the creation of a court of patent appeals to have the jurisdiction in patent causes now exercised by the circuit courts of appeals, practically all of those answering were in favor of establishing this court and only a few were opposed

CHAPTER 14.

SUBJECTS NOT REPORTED ON.

A COURT OF PATENT APPEALS.

For several years members of the American Bar Association and many other attorneys have been urging upon Congress the enactment of a law to create a court of patent appeals to have the jurisdiction on appeal from United States district courts that is now exercised by the circuit courts of appeals of the nine circuits. Bills to create such a court have been introduced in Congress for several years and are pending at the present time. Patents are effective in all parts of the United States and its Territories. The extent of the patent, the question whether it is valid or has been infringed, and every question relating to it are subject to what is practically a final decision in each of the nine circuits if suits are brought therein.

While this commission is not called upon to make a recommendation upon the subject, it invited those who practice before the Patent Office and others interested in patents, to submit their views on the question of the advisability of creating a court of patent appeals. The answers received indicate that the opinion is practically unanimous that such a court should be established. The opinion is also expressed by some that when such a court shall be created it should be charged with the duty now devolving upon the Court of Appeals of the District of Columbia to hear appeals from the Patent Office. The one question submitted by the commission to the attorneys and others did not include a request for an opinion as to the manner in which the court should be constituted nor as to any details concerning its organization and jurisdiction.

The commission submits no recommendation or suggestions upon the subject, as the resolution under which it is working does not require or contemplate that it shall do so. It merely states the almost unanimous view of the attorneys and inventors.

THE WORKING OF PATENTS AND COMPULSORY LICENSE.

The Patent Committee of the House of Representatives has had under consideration several bills looking toward the amendment of the law to prevent the suppression of patents or a monopoly in patent rights. The bill (H. R. 23417) reported by the Patent Committee August 12, 1912, provides a method for compelling the grant

of a license under certain circumstances. The same bill also seeks to prevent a patent being used to restrain unreasonably or to monopolize any part of the commerce among the several States.

Following the decision of the Supreme Court of the United States in the case of Sidney Henry *v.* A. B. Dick Co. (224 U. S., 1), commonly known as the "Dick decision," the President of the United States, in a message to Congress, dated May 10, 1912, recommended that the patent laws should be revised in such a manner that the issuance of a patent by the United States will carry with it the prima facie force and validity of a valid patent. The President further recommended that a careful study of the patent laws should be made by a commission of qualified persons appointed for that purpose, and called attention also to the desirability of careful consideration of the question whether the right of a patentee to extend by contract a monopoly secured to him under the patent law as decided in the Dick case called for a change in the law.

These subjects are under consideration in Congress, and this commission has not made any inquiry as a basis for a recommendation. Attention is called, however, to the laws of Germany and England on these subjects in Appendixes C and D to this report, and to the treatment of these matters by Prof. Albert Osterrieth and Mr. A. du Bois-Reymond in their papers in Appendixes E and F.

TREATIES WITH FOREIGN COUNTRIES CONCERNING PATENT RIGHTS.

During recent years considerable progress has been made through the International Union for the Protection of Industrial Property, and through other channels, toward a condition of reciprocity between the rights of citizens of different countries to their inventions. Considerable progress is being made toward modifying the laws of foreign countries which require American inventors to work their patents granted in such countries or forfeit them, the purpose being to remove such restrictions upon American citizens. It is evident that progress is being made toward securing the acceptance among other nations of the liberal policy of the American patent law under which no condition is attached to the exclusive use of a patent. Whether the failure to work a patent and the refusal to others of the privilege of working it is an evil, and if so, whether it is so injurious as to require the adoption by the United States of a policy different from that established and adhered to in the past history of this country is a question which is now being discussed, not only in Congress but among many persons in the United States who are particularly interested in the subject.

PATENT OFFICE BAR.

The Commissioner of Patents and others interested have recommended to Congress the creation of a Patent Office bar. It has been suggested that officers of the Patent Office and patent attorneys of well-known standing shall be appointed as a board to examine applications for registration as attorneys, and to hold examinations to determine the mental, moral, and professional qualifications of applicants for registration, etc.

While the subject of the qualifications of those who are to practice before the Patent Office is important in connection with the character of work done in the office because the efficiency and character of attorneys affects generally the efficiency of the entire office, it is not a question covered by the investigation upon which this commission is reporting. It would not be possible to make a satisfactory inquiry into the subject in the short time the commission has had at its disposal for the present investigation, and no attempt was made to do so. Particularly is it true that the proposal to establish rules of conduct for registered attorneys with reference to advertising and guaranteeing favorable results upon applications for patents, would require an investigation entirely outside of the resolution under which the commission is working. The question is a complicated one in view of the past conditions and lack of positive provision of law.

For the reasons stated the commission submits no recommendation on the subject.

LITIGATION IN THE COURTS.

In connection with the inquiry of the commission to obtain the views of patent attorneys upon certain phases of this investigation, it developed that there was a general complaint of the complexity, delay, and expense of patent litigation in the courts. This is a subject concerning which the commission has made no investigation, as it was not within the scope of its inquiry. In chapter 4 on Interference Procedure, the complexity, delay, and expense of conducting interference proceedings in the Patent Office is discussed. In that chapter is a quotation from a court decision criticizing the complexity of interference procedure in the Patent Office. The somewhat general complaint against the procedure in the courts may be shown from the following extract from a decision of a United States district court published in 172 Federal Reporter, 953:

> It is a duty not to let pass this opportunity of protesting against the methods of taking and printing testimony in equity, current in this circuit (and probably others), excused if not justified by the rules of the Supreme Court, especially to be found in patent causes, and flagrantly exemplified in this litigation. As long as the bar prefers to adduce evidence by written deposition, rather than viva voce before an authoritative judicial officer, I fear that the antiquated rules will remain unchanged, and expensive prolixity remain the best known characteristic of equity.

But reforms sometimes begin with the contemplation of horrible examples, and it is therefore noted, that the records in these cases as printed, bound, and submitted comprise 36 large octavo volumes, of which more than one-half contain only repeated matter, i. e., identical depositions with changed captions, and exhibits offered in more than one case.

In reading the testimony of one side in one set of cases, there were counted over 100 printed pages recording squabbles (not unaccompanied with apparent personal rancor) concerning adjournments—and after arriving at this number it seemed unnecessary to count further. In many parts of the record there are not 5 consecutive pages of testimony to be found without encountering objections stated at outrageous length, which may serve to annoy and disconcert the witness, but are not of enough vitality to merit discussion in 2,000 pages of briefs. Naturally tempers give way under such ill-arranged procedure, and this record contains language, uncalled for and unjustifiable, from the retort discourteous to the lie direct. (E. G. Ford, C. R., pp. 2873, 2967–8, 2987–8.) And all this lumbers up the court record room, while clients pay for it.

Even when evidence in equity was taken up by written answers to carefully drawn interrogatories, the practice was not marked by economy or celerity; but stenography and typewriting, the phonograph and linotype, have become common since our rules were framed, have made compression and brevity old-fashioned, increased expense, and often swamped bench and bar alike by the quantity rather than the quality of the material offered for consideration.

Motions to expunge and limit cross-examination should have been made in these cases—though they are feeble remedies, exposing counsel to personal reproach and rendering judges afraid of keeping out of evidence what they can not (on motion at all events) understand. But the radical difficulty of which this case is a striking (though not singular) example will remain as long as testimony is taken without any authoritative judicial officer present, and responsible for the maintenance of discipline, and the reception or exclusion of testimony.

In chapter 4 there is a reference to the Rules of Practice for the Courts of Equity of the United States which have been promulgated by the Supreme Court to take effect February 1, 1913, and excerpts therefrom to indicate the change in court procedure in patent causes. The subject is here referred to only to indicate the progress that is being made in this important matter of reform in a procedure which has caused so much complaint. Whether or not there should be any legislation to simplify the trial of patent causes in the courts is one which the commission has not investigated. The taking of testimony in such causes in court and not before an examiner is a radical change made by the new rules.

APPEALS FROM THE PATENT OFFICE TO COURTS.

There appears to be an idea quite generally accepted in this country that a citizen is entitled to have any question of fact or of law finally decided by the judicial branch of the Government. So far as decisions in patent matters are concerned, the policy of allowing every question decided in the Patent Office to be reviewed in a court, is one that has existed from the beginning of the patent system. It may be that the Patent Office has never been organized and equipped in a manner to justify the making of its decisions on any points final and

conclusive on the parties. It would seem that there are many questions which arise in or come before the executive branch of the Government that could be finally settled by administrative officers and thus recognize them as administrative courts, as they really are in fact. This is peculiarly true of the questions arising in the Patent Office. They have no connection with the general business of the Government, and arise in the disposition of a class of work that is highly technical and requires the services of men peculiarly qualified and devoting their lives to the study of such questions.

While the commission makes no recommendation upon the question of a change in the jurisdiction of the courts in patent matters it suggests that it would probably be advisable to modify section 4915 of the Revised Statutes providing the applicant with a remedy by bill in equity in any court having jurisdiction after his application is refused by the Patent Office or the Court of Appeals of the District of Columbia upon appeal from the Patent Office. It is also a serious question whether when parties have fought out an interference proceeding in the Patent Office and have carried it on appeal to the Court of Appeals of the District of Columbia, the final decision should not be binding upon all the parties to the interference, thus preventing the question of priority being taken up de novo in another court.

When the Patent Office shall have been furnished with adequate quarters and equipment and the most efficient personnel it will be time to consider to what extent the decision of the office ought to be final in patent matters. When that time comes it may be found advisable to consider whether a patent should not be made valid by law to the extent of giving the patentee a right to an injunction in a case against alleged infringers. This would probably require the adoption of the practice of publishing applications when ready for allowance with the opportunity for anyone to file opposition within a limited time, and if none were filed or it was decided that the patent should issue it ought to be held valid for all purposes until declared invalid by a court. Such a system would probably require also that any person claiming to be injured by the grant of a patent could file annulment proceedings within a limited period, such as three years, and thereafter the patent would not be subject to attack.

There is a general complaint, although the commission is not advised as to the facts in the matter, that a grant of a patent is of no value to an inventor if it is to the interest of any person or corporation of financial strength to infringe it. The results after a patentee wins an infringement suit are often not of real benefit to him, for if he survives the suit the actual recovery of adequate damages is exceptional.

It would seem that the remedy for many of the difficulties of the present situation regarding patents will be found in the development of the Patent Office as an administrative court in which all questions

relating to patents, excepting the question of infringement, will be finally decided, subject only to a review by an appeal to a court of patent appeals, with possibly a provision for certain questions going to the Supreme Court. Giving such jurisdiction to the Patent Office and to one court will tend to the development of a system of patent law that will be a benefit to the public and a protection to real inventors.

The commission has been unable to see the benefit of the present system by which every question relating to a patent can be litigated in any part of the country. The establishment of a court of patent appeals may be a step in the right direction, but it is believed if that court is established and the Patent Office is developed as it ought to be as an administrative court of the highest type the next change will be on the lines here suggested. This is a question, however, for consideration 10 years or more from the present time, and the manner in which it is settled will of course depend upon the policy adopted with reference to the Patent Office. If that office is to be, as in the past, the authority to grant a patent under an examination system which is in practice about half examination system and half registration system, the complaints concerning our patent system will continue, and it would not be possible to follow the plan here suggested. If, on the other hand, the Patent Office shal be built up to a high state of efficiency, the adoption of such a plan will be a natural and desirable result.

CONCLUSION.

EXPENDITURES IN THIS INVESTIGATION.

The joint resolution under which the commission made the investigation provided for the expenses incurred in the following clause:

> All expense incurred in carrying out the purposes of this resolution shall be paid out of any funds in the Treasury of the United States not otherwise appropriated, and the sum necessary for said purposes is hereby appropriated: *Provided*, That the total expense authorized by this resolution shall not exceed the sum of $10,000.

As the resolution placed the duty of making the investigation and report upon the Commission on Economy and Efficiency, it was decided by the commission not to be practicable or desirable to organize a separate force of employees to be engaged exclusively upon the Patent Office investigation, but to make use of the experts and accountants as well as clerks and stenographers who were in the employ of the commission and to charge the expense incurred for time of employees and for miscellaneous expenses on account of the Patent Office investigation work to the appropriation therefor.

The commission has been at a disadvantage in making the investigation, not only on account of the brief period allowed by the resolution under which it is working, but also because of the fact that it

did not have an appropriation that would authorize the employment, even for short periods, of one or more persons actively engaged in the practice of law in patent causes. While the joint resolution authorized the payment of all expenses incurred in carrying out the purposes of the resolution not exceeding a total of $10,000, it was held by the Comptroller of the Treasury that the limitation on the regular appropriation for the work of this commission, made in the sundry civil appropriation act of August 24, 1912, prevented the employment of more than three persons at a compensation in excess of a rate of $4,000 a year. The commission is organized by the President with three members, each of whom receives more than this rate of pay. The limitation referred to on the appropriation of $75,000 reads as follows:

Provided, That not exceeding three persons may be employed hereunder at rates of compensation exceeding $4,000 per annum.

Under the circumstances the commission did not attempt to employ patent experts, as it was not believed that men whose services would be of value to the commission could be obtained at the rate of $11.11 per day. The investigation was therefore directed by the members of the commission in connection with their other work and was done by the experts and accountants in the service of the commission, the members of the commission considering the facts and formulating the recommendations.

The Comptroller of the Treasury further held that the commission might secure papers by experts in patent law and procedure, by agreement as to the price to be paid. The commission was therefore enabled to secure the two papers which are attached to this report as Appendixes E and F. It believes that the information contained in these papers will be of value in considering changes in the patent law of the United States.

In submitting this report the commission wishes to note the fact that the Commissioner of Patents and other officials of the Patent Office have placed at the disposal of the commission all information in the office on the subjects of this investigation and have afforded every facility at their command. While the investigation was made independently of the officials of the Patent Office, yet it was necessary to call upon them for the production of certain facts and to explain their reasons for following the methods now in effect. In every case, notwithstanding the short time allowed for the investigation, the Patent Office officials have responded to all requests made.

Respectfully submitted.

FREDERICK A. CLEVELAND,
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Commissioners.

APPENDIX A.

HISTORY OF THE UNITED STATES PATENT SYSTEM.

HISTORY OF THE UNITED STATES PATENT SYSTEM.

The patent system has not escaped the popular charge that it is a tool in the hands of the trusts and corporations, whereby individual effort is deprived even of hope of success, unless it accepts its reward from the hands of the "combination" on terms which that combination names. And yet it was against monopolies that the system of patents as instituted by statute was aimed.

In 1603 there came before the English courts the test case in monopolies (Darcy *v.* Allen, Noy, 178) which established the principles of absolute but limited monopoly as the right of an inventor. In this case a decision was handed down by the judges which clearly defined the conditions under which a right to a monopoly would be upheld. Henceforth patentability depended upon (1) priority of claim, (2) novelty of invention, and (3) usefulness of the device. In the words of the judges:

"Where any man by his own charge and industry or by his own wit and invention doth bring any new trade into the realm, or any engine tending to the furtherance of a trade, that never was used before, and that for the good of the realm; that in such cases the king may grant to him a monopoly patent for some reasonable time until the subjects may learn the same, in consideration of the good he doth bring to the commonwealth; otherwise not."

This case emphasized the theory which had governed the grant of monopoly patents in Elizabeth's reign. Judges had so opined before the case in hand, but neither king nor subjects had abided strictly by the judgment. The existence of illegal monopolies and the injustices practiced under their protection brought in 1623 the enactment of the so-called "Statute of monopolies," by which all previous illegal monopolies for once and all were abolished and the definition of the judges in the Darcy *v.* Allen case as to priority, novelty, and usefulness, established as the patent law of the realm.

The statute of monopolies was not obeyed at once nor consistently adhered to by future English kings, but it established on the books a law to which England itself paid little attention until Arkwright and Watt brought before the public mind the question of patents through the trial of their cases in the courts. The spirit of this same law the United States undertook to incorporate into its own system almost 200 years after the enactment of the statute.

In 1641 we find the General Court of Massachusetts Bay issuing a patent to one Samuel Winslow for a novel method of making salt. By the terms of the patent grant all others were restrained for 10 years from making salt unless by methods distinctly different from his process, provided he set up his works within the year. Again, in 1646, the same court granted to Joseph Jenks a patent for "an engine for the more speedy cutting of grass." This patentee claims the grant in justice to himself that "his study and cost may not be in vayne or lost."

Connecticut was prominent in the grant of monopoly patents. Yet, while Massachusetts grants a royalty of 10 shillings for life to John Clark for an invention for sawing wood and warming houses, Connecticut, in the revision of its laws in 1672, ordered "that there shall be no monopolies granted or allowed amongst us but of such new inventions as shall be judged profitable to the country and for such time as the general court shall judge meet." The restriction of monopolies to such inventions "as shall be judged profitable to the country" is in direct keeping with the English idea, which rates the importance of the invention on its potential benefit to the public. The original motive, which was to govern the law in the United States, was the encouragement, the stimulation, of inventive genius in the individual.

The inventive activity of Connecticut extended to almost every industry in the colony, and the petitions and grants cover a wide range of interests.[1] The several acts for the encouragement of discoveries and inventions throw an interesting light on the attitude of the colonial mind toward the grant of monopolies. In the majority of the other colonies the records fail to give any information as to the existence or extent of letters patent.

In 1787, however, Maryland granted a patent to Oliver Evans for making and selling machines for the use of mills, also for a steam carriage, under conditions quite the reverse of those implied in English law. The grant provided that recovery for infringement might be had if the grantee should be proven "not to be the original inventor." In other words, the burden of proof was put on the defendant, forcing the infringer to prove that the plaintiff was not the original inventor. Thus it made the patent grant evidence of novelty unless the defense could prove otherwise.[2] This is an important step away from the English system as it presumes, even demands of necessity, examination to give security and weight to such presumption of validity. It points the way to the development of the American patent system in the law which followed the ratification of the Constitution.

To Madison belongs the credit of introducing into the Constitution provision for the security of copyrights and the promotion of useful knowledge and discoveries by the grant of premiums. On August 16, 1787, he submitted to the committee on detail two propositions, viz, "to secure to literary authors their copyrights for a limited time," and "to encourage by premiums and provisions the advancement of useful knowledge and discoveries." On the same date Charles Pinckney presented provisions "to grant patents for useful inventions" and "to secure to authors exclusive rights for a certain time." The committee on detail embodied these suggestions in a recommendation which afterwards was incorporated in the Constitution (Art. I, sec. 8, par. 8). It gave to Congress the power "to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries."

Initial interest in patents and the provision for their encouragement has been credited to the activity of Thomas Jefferson. The statements in this regard in the various historical sketches of the patent system are not substantiated by fact. Madison submitted his suggestion to the Continental Congress long before he communicated it to Jefferson, whose answer advocating the utmost protection against monopoly was written from Paris several months after the acceptance of the Constitution. Nor was Jefferson responsible for the first patent law, which the President approved April 10, 1790. In fact, his attitude toward patents at this period was one quite the reverse of ardent championship. Previous to 1790 his opinion of patents is that they constitute a monopoly, and that while possibly they might lend some aid in forwarding the industrial progress of popular equality that the slight advantage gained would be more than counteracted in the defeat of pure republicanism. "Our country does not look with favor on them" is his information to a foreign correspondent. Jefferson's connection with patent legislation is to be found in the bill which he drafted in 1791 and which was introduced by Mr. White on February 7. It passed to its second reading, but failed to become a law in that Congress. Many of the provisions of this bill[3] were embodied in the law of 1793, which was diametrically opposite to the theory of the first law and which in fact repealed it.

But even in this instance of his direct interest in the patent question, the activity seems to have been the result of force of circumstances. He drafted the bill, which failed to pass; he answered Williamson's request for help in framing a new bill in

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[1] 31st Cong. 2d sess. Ex. Doc. 32.

[2] In the correspondence of Thomas Jefferson are several letters in regard to the litigation which arose over the originality of this very invention.

[3] Writings of Thomas Jefferson (Ford edition), Vol. V, p. 278.

the next Congress with a letter,[1] dated November 13, 1791, in which he acknowledges himself in considerable difficulty, and favors placing the burden of protection against infringement on the patentee; he ended his connection with this bill, which ultimately became law, with the following:

"APRIL 1ST, 1792.

"TO HUGH WILLIAMSON.

"Thomas Jefferson presents his compliments to Dr. Williamson and returns him the draught of the bill of projects, with the alterations he proposes to it. These will certainly put the business into a more steady channel, and one more likely by the establishment of fixed rules, to deal out justice without partiality or favouritism. Above all things he prays to be relieved from it, as being, of everything that ever was imposed on him, that which cuts up his time into the most useless fragments and gives him from time to time the most poignant mortification. The subjects are such as would require a great deal of time to understand & do justice by them, and not having that time to bestow on them, he has been oppressed beyond measure by the circumstances under which he has been obliged to give undue & uninformed opinions on rights often valuable, & always deemed so by the authors."

The origin of the act of 1790 is due to the activity of a certain John Fitch, of Pennsylvania. His petition was the particular event which brought before Congress the need of a patent law. On May 13, 1789, in presenting his petition to the House he states that "he is the original discoverer of the principle of applying steam power to purposes of navigation and has obtained an exclusive right therein for a term of years in the States of Virginia, Delaware, Pennsylvania, New Jersey, and New York and praying that his rights may be secured to him by law so as to preclude subsequent improvers upon his principle from participation therein, until the expiration of his granted right."[2] The petition was referred for consideration and report to a committee, consisting of Huntington, Cadwalader, and Contee. On June 23, Huntington reported a bill "to promote the progress of science and useful arts, by securing to authors and inventors the exclusive right to their respective writings and discoveries." The bill passed its first reading. For the rest of the session nothing was done and all petitions for "exclusive rights to inventions and writings" were laid on the table.

At the convening of the second session Washington took occasion in his message to urge upon Congress the prime importance of the subject:

"The advancement of agriculture, commerce, and manufacture, by all proper means, will not, I trust, need recommendation; but I can not forbear intimating to you the expediency of giving effectual encouragement as well to the introduction of new and useful inventions from abroad as to the exertions of skill and genius in producing them at home. * * * Nor am I less persuaded that you will agree with me in opinion that there is nothing which can better deserve your patronage than the promotion of science and literature."[3] In the counsel of the President there is a breadth of economic consideration which is lacking to a great degree in the petitions of the inventors of that time. He would adopt a sane middle course, encouraging domestic talent, but in no wise failing to draw the utmost advantage from the progress of improvement and novelty which was taking place in the established industries of Europe. While concurring in the American insistence on encouragement of the individual, at the same time Washington would keep an eye to the general public advance—a combination of the English point of view and that of his own countrymen.

In the early part of the second session, congressional action on petitions "for exclusive rights" was postponed until "a bill to promote the progress of useful arts" should be taken into consideration. A House Committee on Unfinished Business had reported, January 11, as undetermined, eighteen petitions of inventors and authors

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[1] Writings of Thomas Jefferson (Ford edition), Vol. V, p. 392.

[2] Annals of Congress, 1st Cong., Mar. 4, 1789; Feb. 10, 1790, p. 335.

[3] Ibid., p. 933.

and a bill to promote the progress of science and useful arts. The House also passed a resolution calling on the Secretary of the Treasury to report a proper plan, "conformably to the recommendation of the President of the United States * * * for the encouragement and promotion of such manufactories as will tend to render the United States independent of other nations for essentials, particularly for military supplies."

Hamilton, as Secretary of the Treasury, reported in 1790 that the deficiency in amount of circulating medium which at the time was embarrassing the United States was due to the vast tracts of waste land and the slightly advanced state of manufactures. "Money will not abound in a country which has not mines or a variety of manufactures."[1] Again, in the "Report on Manufactures" in the following year, he states the considerable bearing which the use of machinery has in promoting and developing the Nation, citing particularly the influence of such inventions as the cotton mill. "If the Nation has genius for mechanical improvement, as is so often stated, encourage it."[2] Further he says: "The encouragement of new inventions and discoveries at home is among the most useful and exceptional of acts which could govern the country. This privilege should be extended to the introducer as well as to the inventor."[3] This last is a new idea and one which at the present time is exercising the minds of English patent authorities.

It was in the interest of authors, however, that Mr. Burke, on January 25, moved the appointment of a committee to provide for the security of literary property. A committee was appointed, to consist of Burke, Huntington, and Cadwalader, to consider the question of copyrights and to report also a bill to promote the progress of useful arts.

On March 4, 1790, the House resolved itself into a Committee of the Whole on the bill which this committee presented for discussion. Of considerable interest is the debate on the clause providing for a right to appeal to a jury from the decision of the referees in granting or withholding patents. This idea of appeal to a jury had been the subject of petition to Congress by the same John Fitch who in the previous session had asked the protection of Federal law for his principle of applying steam to navigation. The petition had been submitted to the committee in charge of patent legislation, but their incorporation of his suggestion in the bill at once met with congressional disapproval. The defense of appeal to a jury claimed that thereby was assured to the citizen a right to which he was entitled; that an issue of as great importance as was quite possible to arise under the grant of a patent ought not to be submitted to a group of three men, two of whom might be so differently interested as never to agree, thereby leaving the decision to the influence of the person nominated by the Secretary of State. Opposing this argument was the contention that juries ought not to be called upon to judge matters which in all likelihood they would not be competent to judge; that it was easier to find three than twelve persons qualified to give an intelligent decision on such highly technical questions as would arise under patent law, and that the possibility of justice was more feasible with three scientific minds than with twelve of haphazard choice. The motion to strike out the clause providing for a jury was carried in the affirmative. After further discussion the bill was passed and sent up to the Senate, where it was passed with several amendments. All of these the House agreed to, save one which vested in the Supreme Court the determination of what compensation inventors should receive. This amendment the Senate withdrew, and the bill became a law on April 10, 1790.

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[1] Report of Secretary of the Treasury, 1790.
[2] Report on Manufactures, Annals III.
[3] Hamilton's Works, Report on Manufactures, Vol. III, p. 253.

THE LAW OF 1790.

The law was neither long nor involved. The applicant described his invention, presented a drawing, and if possible a model. No oath was required. The specification was to be of such particularity and the model so exact as not only "to distinguish the invention or discovery * * * but also to enable a workman or other person skilled in the art of manufacture whereof it is a branch * * * to make, construct, or use the same, to the end that the public may have the full benefit thereof" after the expiration of the patent term, which was fixed at 14 years without provision for extension. The act provided for filing both specifications and models with the Secretary of State, to whom persons might apply for copies from which to have models made. Damages were recoverable for infringement, and patents obtained through fraud were to be repealed. In any infringement case the patent was to be prima facie evidence of the priority and originality of the device. On the other hand the defendant might plead the general issue or any special contention which tended to prove that the specification concealed, overstated, or misstated the truth concerning his invention. No provision was made for the revocation of the patent in case the verdict was for the defendant, unless fraud was proved. Fees were proportioned as follows: For receiving and filing the petitions, 50 cents; for filing specifications per copy sheet containing 100 words, 10 cents; for making out a patent, $2; for fixing great seal, $1; for indorsing the day of delivering the same to the patentee, including all intermediate services, 20 cents. The act excluded none from the right of application.

The authority for granting the patent was vested in the Secretaries of State and War, the Attorney General, and the President. The Executive's power was simply signatory. The Attorney General was to see to the correctness of form, but he also had full power to act with either one or both of the Secretaries in the grant of patents. Their authority was still greater, since by the terms of the act they had discretionary power in the allowance of patents. If they deemed the device under question to be sufficiently useful and important, the patent was to be granted. The law did not provide for an appeal from the decisions of this discretionary body, and it was upon this question of "discretion" that the "examination" system—as that provided by the law of 1790 is known—was to flounder within two years.

The first board was composed of Thomas Jefferson, Secretary of State; Henry Knox, Secretary of War; and Edmund Randolph, Attorney General. That they exercised their power to the fullest extent appears from the fact that during the first year but three patents were granted. The law did not attempt to organize any machinery for carrying on the business of granting patents beyond its provisions for infringement and fraud cases. While the law is defective and altogether neglectful of some minor points, in the essentials it is characterized by a remarkable individuality. It is free from foreign exclusion; it institutes the examination system; it fixes the fees at an intentionally low rate, sufficient to cover simply the cost of issue; all in the interest of promoting science and the arts, and all quite different from the examples of patent practice which the European systems offered.[1]

Apparently from the beginning the business of the patent system was organized in the Department of State. Immediately upon the passage of the bill there was put forward in the House a resolution to provide for an additional clerk in the Department of State, and for some years this constituted congressional action for the administration of the patent work. The patent business so increased, however, that in 1802 it was no longer possible for one clerk to handle it, and here began the organization of the Patent Office as a division under the Secretary of State.

The effect of the law was such that Jefferson, in a letter written during the early days of the patent board, said: "The act of Congress authorizing the issue of patents for

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[1] Hamilton, however, reckoned patent fees as current revenue. (See Hamilton's Works, Vol. III, p. 475.)

new discoveries has given a spring to invention beyond my conception."[1] He credits the increase in the number of inventions to the length of the term—14 years—as provided by the law. Procedure was slow, of necessity, he says. The board, aware how new was their field, determined on a conservative policy which would allow for the gradual growth of procedure. The rules which they did put in force were thoroughly sane, but met with the general disapproval of the interested public. The fact that there was no appeal from the board, that it exercised its full power of discretion, that its attitude was popularly considered hostile to the very classes in whose interests the law was passed, i. e., to the industrial classes, and because of the delay and expense to which the applicant was subjected before the several members of the board were sufficiently free from their individual duties to attend to patent business, brought the law of 1790 into disfavor as early as February of 1791.

A bill was introduced by Mr. White in that Congress which was completely at variance with the theory which had governed the law of 1790. The bill was drafted by Thomas Jefferson, but how far it was the result of his own interest or knowledge of the subject is to be seen in the letter to Hugh Williamson on the subject of patent law written a year, after as hereinbefore quoted. In regard to aiding further in the drafting of a bill on patents he says: "Above all things he prays to be relieved from it, as being of everything that ever was imposed on him, that which cuts up his time into the most useless fragments and gives him from time to time the most poignant mortification. The subjects are such as would require a great deal of time to understand & do justice by them, and not having that time to bestow on them, he (Jefferson) has been oppressed beyond measure by the circumstances under which he has been obliged to give undue and uninformed opinions on rights often valuable, & always deemed so by authors." The bill[2] which he drafted passed to its second reading, but nothing further was done with it during that Congress, and while Williamson asked his aid in framing the patent legislation of the following year, the bill which became law differs materially from that framed by Jefferson.

In December, 1792, Williamson introduced the future act of 1793. The debates upon the bill are of great interest. As has been stated previously, a considerable part of the general dissatisfaction with the law of 1790 was assigned to the delay and expense incurred by applicants while waiting for the Secretaries of State and War and the Attorney General to dispose of regular official business before giving attention to additional task of patent grants. The claim put forth for his bill by Mr. Williamson was that it was directly derivative from the English system and that its provisions were such as would circumscribe duties of the presiding officer within very narrow limits. At this time it was proposed in the debates that the grant of patents be given to district judges or the Director of the Mint. Mr. Murray, in defending the bill, declared a patent system worked to an advantage which only the National Government could secure and which it could not afford to neglect. After several amendments, among which was the substitution of the Secretary of State for the Director of the Mint as a more logical officer, the bill was passed on February 4, 1793.

By the new act examination was practically eliminated in favor of registration. Procedure in obtaining a patent aimed to make the issue of a patent as easy as possible. The applicant paid into the Treasury a fee of $30, receipt for which he presented to the Secretary of State, to whose department the money finally passed, in the clerk-hire account. After this preliminary step the inventor presented his petition in the form of a sworn statement to the Secretary of State. Practically the Secretary took him at his word and issued the patent to him, having first secured the President's signature to the letter patent and the Attorney General's approval of the form. Returned to the Secretary for his final approval, the letters were recorded, sealed and issued. These records were kept in the Secretary's office, as were also the models.

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[1] Writings of Thomas Jefferson (Memorial edition) Vol. VIII, p. 50, 20 vols. Index. Washington, 1903.

[2] For original draft of the bill see Writings of Thomas Jefferson (Ford edition) Vol. V, p. 278.

The latter were furnished when the Secretary thought them necessary to supplement the specifications. The Secretary's office was to prepare for issue on request copies of the specifications of devices patented. These copies were forwarded to anyone desiring them, for a fee amounting to 20 cents a sheet. If drawings were called for a charge of $2 was made. Receipts from both copies and drawings were turned over to the clerk-hire account.

A patent under the law of 1793 could be assigned for the term. The provision for infringement followed those of the previous law in the main. The forfeit was fixed at three times the amount the patentee obtained by sale or license of his machine. A case of infringement could be brought in the circuit court or any other having competent jurisdiction. The defendant might plead the general issue and special claims, the same as in the law of 1790. By the substantiation of any of the claims, however, which would award the verdict to the defendant, the patent was declared void.

A new provision of the law was that in regard to interference cases, which were not considered in the law of 1790. According to the new act, interfering applications were to be decided by an arbitrating board consisting of three persons, one the choice of each applicant and the third the appointee of the Secretary of State. This board heard the case and sent its decision in writing to the Secretary. The signature of two members was all that was necessary, and this decision was to be final as to the granting of the patent. Any refusal on the part of a contestant to abide by the decisions of the arbitrating board gave the issue of the patent to the opposing party. Where there were more than two claimants and no agreement could be reached as to the arbitrators, the Secretary of State could appoint all three. Proof of fraud under any conditions not only caused repeal of patent, but it placed on the former patentee full costs of the case.

In addition to eliminating the examination system, providing for interference cases by arbitration, and for voiding patents in infringement cases if the defendant proved any of his claims, the law introduced discrimination against aliens. No foreigners could obtain a patent under the United States law, upon the theory that this country would place itself economically at a disadvantage if it allowed foreigners, who had in all likelihood patented their invention abroad, to patent it here. The law was regarded later as a deterrent, and in 1800 it was so amended that equal rights were granted to aliens who had been resident in the United States for two years.

Up to 1802 the work of the office was inconsiderable. The clerk in the State Department was not exclusively engaged in patent work, and it has been stated that "all the records did not fill over a dozen pigeonholes."

THE PERIOD FROM 1793 TO 1836.

The law from the beginning was not wholly satisfactory. In the Fifth Congress Mr. Cort called the attention of the House to its inconsistencies. As an instance, he takes the question of the "real inventor," whom the law of 1793 failed to define. A man obtains a patent on his attested statement that he has invented something new and useful. If later he finds anyone making use of the device he patented, he can bring him into court in a civil suit, but the question as to which one is the "real inventor" the patent law does not determine. The act of 1790 was better in this respect, he says, for by the examination of the patent board previous to the grant of the patent authorship was established. The committee appointed to recommend necessary changes in the patent law reported a bill which repealed the two sections of the act of 1793 providing for arbitration of disputes, and which established a penalty for those who violated the patent rights by infringement. The debates evidence the difficulties of the registration system in its provocation of interferences and reduplicated issues. The bill, however, failed to pass.

The act approved June 7, 1794, had to do with revival of suits which in 1793 were being prosecuted under the law of 1790. This law of course soon became obsolete with the settlement of such litigation as was then on the docket. In 1800 a broader policy was adopted in regard to foreigners. It was provided by the act approved April 17, 1800, that aliens resident two years within the United States were entitled to the privileges allowed to citizens under the law of 1793. Contrary to the statements so generally made, the act does not specify that the alien must declare his intent and desire to become an American citizen. Procedure heretofore in the case of all aliens, and after 1800 for those not resident in the United States, was difficult and expensive not only to the individual, but to the Nation, as each case demanded special legislation upon the petition of a foreigner for a patent.

In these early years nothing of much consequence was done, but beginning with the date of Oliver Evans's patent there began to appear the troubles and vexations of the system. He obtained a patent on what he termed "Elevators, conveyers, and hopper-boys." Jefferson had been evidently acquiring knowledge on the patent subject, for his letter to Oliver Evans [1] in regard to his rights and the nature of patents is very long and very confident. Declaring that none wish more than he the liberal encouragement of ingenuity, he goes on to point out that a patent is a record and has conveyed to the patentee a right from the public under a form which is evidence of the legal issue of the grant. The letter patent ought to be acceptable at sight—it bears the signature of the President and of the Secretary of State. The grant is made in recognition of the fact that the provisions of the patent law have been fulfilled by the applicant. Evidently Evans was in some doubt as to the dependence he could place on a patent grant in the legal dispute in which defense of his patent was then involving him.

That his doubts were not baseless is evidenced by the letters [2] which passed between Jefferson and Isaac McPherson in 1813 on the subject of this patent. There is an interesting presentation of "novelty" as well as extent of claims in which Jefferson sets forth his favorite contention against exclusive rights for a device where the only change from a previous invention is in material, in application, in form—for example, connecting buckets by a band of leather rather than by hemp or iron; using a chain pump to raise wheat instead of water; forming a hat into a round shape instead of three-square. Here it may be noted that these very distinctions which the patent board established as "rules" gave rise to the theory that a patent was not valid until proved so in court, though in 1807 Jefferson had said a patent ought to be considered valid until proved otherwise in the courts. However, in his correspondence with McPherson he acknowledges that time from their higher duties was not sufficient to permit of inquiry by the board into the questions which their own rules called into being and that as a result the business was turned over to the judiciary to decide. By the old system, he says, the patent would be refused by the board in the first instance; now (1813) the patent issued subject to be declared void in a court of law. Inventors might "in vain turn over all the lubberly volumes of the law to find a single ray which would lighten the path of the mechanic or mathematician. It is more within the information of a board of academical professors, and a previous refusal of patent would better guard our citizens against harassment by lawsuits; but England had given it to her judges, and the usual predominancy of her examples carried it to ours."

Nor does the committee appointed by resolution of the House in 1812 to inquire into the state and condition of the Patent Office fail to note [3] the dangerous instability of a patent when presented as evidence in court. It sums up its dissatisfaction in the following:

"It is with difficulty that the case is brought to a decision before a court of justice, and not infrequently the inexpediency of awarding in favor of the plaintiff is too well

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[1] Works of Thomas Jefferson (Washington edition), Vol. II, p. 75 (1807).

[2] Writings of Thomas Jefferson (Memorial edition), Vol. XIII, pp. 326, 379.

[3] Inquiry into the state of the Patent Office, American State Papers, Miscellaneous, Vol. II, p. 190.

maintained by a jury of interested persons. Our court records furnish too many instances of this kind. It becomes us to guard against them in future by a modification of the statute of the United States which shall unequivocally secure to inventors their discoveries and inventions."

At the same time the committee does not deny that patents are often issued for apparently trivial and ridiculous inventions, and yet it would not check even these, as they cost "the State nothing" and may lead to unlooked-for progress. The idea that indiscriminate issue of patents casts no extra expense on the Federal Government has prevailed even to the present time. It is a debatable question, however, and the claim that there is in the Treasury a steadily increasing sum to the credit of the Patent Office does not disprove the fact that with the issue of every frivolous patent the labor, and hence the cost, of supporting the office is by so much increased and the possibilities of litigation enlarged. Both these results have a money value for which the Government stands debtor.

At this period the conduct of the Patent Office was called into question, and the inquiry which the above-mentioned committee conducted was intended by the House resolution to ascertain the number of employees, the state and condition of the office, and what, if any, fees had been demanded by the clerks, gross amount of fees received up to December 31, 1811, how expended, how accounted for, and amount of balance on hand. This information, of course, was to be obtained from the Secretary of State, and it is interesting to note that the members of the committee evidently appreciated a certain incongruity in the establishment of the Patent Office within the Department of State. Chairman Seybert ends his letter of inquiry to Monroe, their Secretary, with the suggestion that "this occasion may enable you, by a proper representation, to separate the patent establishment from the Department of State and to afford you an opportunity to suggest an organization more proper than the present for the depot of models."

Monroe made answer that in debating the question whether the Patent Office should not be independent of all departments and responsible to the President he considered the objections must be given great weight. He disapproved the independent organization of the minor bureaus whose heads are not, and ought not to be, members of the administration. All such should be included under some department of the Government, since "concerns of such inferior departments can not be investigated and discussed with the same advantage in the meetings and deliberations of the administration as they might be if the person charged with them was present. * * * To remedy this inconvenience the President would necessarily become the head of that department himself, and thus be drawn into much investigation, in detail, that would take his attention from more general and important concerns, to the prejudice of the public interest." He considered the Patent Office was as properly a part of the State Department as it was of any other department.

Going into particulars of office organization is the statement of Dr. William Thornton, Superintendent of Patents. Prior to 1802 the entire business of patents had been carried on by the clerks employed in the general business of the Department of State. In the latter part of that year, however, Dr. William Thornton was made Superintendent of Patents, not, as is stated, by Thomas Jefferson as President, but by James Madison, then Secretary of State. For his services Dr. Thornton received $1,400 per annum, which, he states, Madison, as Secretary, increased in 1808 to the rate of $2,000. The work increased to such a degree that in 1810 he felt it oppressive and requisite of more aid. A Mr. Lyon became his assistant, at a salary of about $550. He established a rule from the beginning to receive no fees from applicants. The regular patent fee was, by the provision of the act of 1793, paid directly into the Treasury by the applicant, so that there was no accounts kept in the Patent Office or the Department of State of the receipts and expenditures of the patent establishment. Fees from 1793 to 1811 amounted to $49,110. The great increase seems to have come with

Dr. Thornton's entry into the office. In 1801 they came to $1,410; in 1802, $2,100. They increased uniformly with the exception of the year 1805, when they declined to $1,710. By 1808 they had risen to $4,860 and in 1811 to $6,810. The expenditures beyond the superintendent's salary and that of his assistant were for stationery, printing, and other miscellanies, which left as net revenue from the patents $25,379.34.

The housing of the office was provided for by the act of April 28, 1810. The old quarters were too crowded, and an appropriation of $20,000 was made which the President was empowered to expend in the purchase or erection of a building suitable to the needs of the "General Post Office" and of the "Keeper of the Patents." In 1812 a further appropriation of $9,553.91 was made for its repair, and in 1828, $12,000 was appropriated for an additional building for the General Post Office and Patent Office. These were the quarters destroyed by the fire of 1836.

Favorable as was the report of the committee of 1812 in regard to the Patent Office and its management, the problem of organization for the sake of efficiency was again the object of solicitude in Madison's administration. If any of the framers of the Constitution are to be awarded particular credit for activity in the cause of industrial progress by Government aid in the guise of a patent system, that award belongs to Madison. In 1816 in a special message [1] to Congress he urged the creation of a Patent Office as a distinct bureau in charge of a director whose remuneration should be adequate to his services. This bureau was to continue under the Department of State, but the separation therefrom of the patent force and work, under a more convenient arrangement, seemed to the President necessary in view of the importance and growing business of the subject. Acting upon the recommendations of Secretary Monroe, in his letter to the committee of 1812 he suggested the extension to the Director of Patents the franking privilege, thereby freeing the State Department proper of considerable labor. He also suggested that further restraints be imposed on the issues to wrongful claimants and that further guards be provided against fraudulent exactions of fees by persons possessing patents. A bill embracing the President's recommendations was reported, but soon afterwards the committee thereon was discharged from consideration and the bill was postponed indefinitely.

Memorials complaining of the injustice resulting from frivolous patents which fell into the hands of speculators if they did not originate there continued to be presented to Congress, but that body sought by legislation on judicial procedure to stop the gap. It may not have occurred to them to check the trouble at its source right in the Patent Office. In 1819 in their attempts to secure justice to the patentee they not only gave to the circuit court original cognizance in all cases respecting the rights of inventors and authors, but provided that from all judgments of the circuit courts appeal should be had to the Supreme Court of the United States. In 1823 a long debate on a bill to allow costs to patentee in infringement cases came to nothing. In 1824 in a si ilar piece of legislation presented by Daniel Webster as member of the Committee on the Judiciary, the debate, especially that of Buchanan,[2] makes evident a surprising condition of fraud and imposition on those who lived too far from the seat of government to know the protection the law afforded them. Webster declared a patent was evidence of property—the invention the fruit of a man's brain; that industries grew in proportion to invention; that therefore the Government must aid progress by fostering the inventive genius of its citizens. His opinion was that the greatest latitude which justice would allow was necessary, for, as it was, the patentee was sufficiently burdened with the niceties and technicalities of the application of the law.

In the congressional debates of the years 1829 and 1830, considerable discussion took place in regard to admitting to full privileges the foreign applicant and increasing the patent fee. Petitions for patents had been made by foreigners according to the old system, and the result had been great expense to the applicant and to the Government, as each application had to be the subject of special congressional legislation. It was

[1] Annals, 14th Cong., 1st sess., p. 1359.

[2] Annals, 18th Cong., 1st sess., Vol. I, pp. 932 et seq.

proposed to increase the fee from $30 to $70 on the argument that the increase would not in any way check those possessing really useful patents, but would keep within bounds useless inventions. Those who argued against the plan for increasing the fee claimed that by such increase the aim of the patent system was defeated in that it would curtail applications for patents and so discourage progress.

Matters continued in this unsatisfactory condition until 1830. A deficiency of $4,290 occurred in the Patent Office accounts kept in the Treasury. President Jackson ordered an inquiry to be made, from which it appears [1] that Dr. Thornton had conducted the office from 1802 to 1828 with an independence and laxity of business method, especially in his exceptions of fees, that naturally gave rise to irregularities.

The superintendent was not alone in his disregard for the law. The Attorney General, who by its provisions was to sign patents only after they were in proper form and the fee receipt attached, had been in the habit of signing all the patents before they had been completely filled out, and therefore was unaware whether the fee had been actually paid. The same laxity pervaded the keeping of records, the custody of models, specifications, and copies.

The report stated a need of more room, more clerks, and careful recording of patents issued. William Eliot, in his report as clerk of the Patent Office, said it remained to be proved by experience whether the system in practice was more beneficial to the country than the judicious exercise of discretionary power by a superintendent to aid the applicant in obtaining a perfect patent without further expense than the patent fee. This entire report is interesting for its information in regard to patents issued, fees received, classification of models, and procedure in the Patent Office. There is also a lengthy discussion [2] of the merits of the system in the debate on the Hayne bill, which sought to give the foreigner equal patent rights with the citizen and by increasing the fee for both of them to reduce the number of frivolous patents then being issued.

In 1831 the Secretary of State was called on by Congress to report on the condition of the Patent Office. In his letter he declared that no record had been retained of the 5,000 patents issued. The superintendent claimed the force was insufficient. If administration appeared lax it was due to the impossibility of properly supervising the office. The attitude of Congress toward the Patent Office, that it was not sufficiently important to require particular legislative attention, to his mind was a large factor in accounting for the unsatisfactory conditions. The result of the inquiry of 1830 was the provision for an additional clerk in the Patent Office and a regulation of salaries. The Patent Office now consisted of three persons, a superintendent and two clerks. The legislation for the recording of patents was not enacted until 1832, when the law of March 7 authorized the expenditure out of the proceeds of the fees a sum sufficient to procure the necessary books and other accommodations for recording patents. Later, on May 5, $12,000 was appropriated to carry on the work of recording.

In 1833 another inquiry was conducted by order of the Secretary of State upon charges made against John D. Craig, then superintendent, by William Eliot. Dr. Thornton died in 1828, and after the withdrawal of a certain Mr. Jones, in 1830, Dr. John D. Craig was named for the position.

A Senate committee was appointed which reported [3] with a bill on April 28, 1836. Senator Ruggles made the report and in it he points out specifically where the law of 1793 was at fault. According to the practical construction given the act, the Secretary of State had no power to refuse a patent for want of either novelty or usefulness. The only question which he could raise was in regard to compliance with the prescribed terms and forms. The term "useful" was interpreted as "not harmful." The result of this policy of indiscriminate grant brought a train of evils

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[1] State Papers, 21st Cong., 1st sess., Vol. II, Doc. 38.
[2] Congressional Debates, 21st Cong., 1st sess., p. 377 et seq.
[3] 24th Cong., 1st sess., S. Doc. 338.

which had grown steadily in number and intricacy until Congress was compelled to act. Hitherto its attitude toward patents had been that the subject was not of sufficient importance to demand legislation. Through Senator Ruggles's insistence, he forced it to see that a great portion of the patents issued are worthless, conflicting or infringing on the rights of others, or upon public rights not subject to patent privileges; that this flood of monopolies embarrassed the real patentee and the public as well with its inclusion of methods or articles in general use; that the startling accumulation of cases in the courts was onerous to the judiciary, ruinous to the patentee, and injurious to society; that the system was an open door to fraud and extortion. A check, therefore, was necessary and that check must be exercised in the department charged with the service, though Ruggles adds "as it may not be thought proper to intrust its [power to grant patents] final exercise to the department, it is deemed advisable to provide for an occasional tribunal to which an appeal may be taken." [1] As further security it seemed to him best to provide in certain cases for recourse to the courts for revision of the decision where there was an adverse party to contest the patentee's rights.

To the minds of those who framed the new bill the prime requisites for the efficient working of the patent system were proper examination and investigation in the first decision. That meant giving to the Patent Office a new organization and a personnel quite above the ordinary clerkship. Competency and efficiency must equal the responsibility and the character of their duties. This was necessitated not only by the new system but by the progress of industrial art. Up to the War of 1812 the arts were not widely understood. What inventions we had attempted were principally within the fields of agriculture, transportation, manufacture of fabrics and household articles. To a great extent we depended on Europe for the manufactured articles. For this reason there was no great incentive or opportunity for invention. Invention is primarily the result of a recognized necessity. Other forces may be brought to bear later which may or may not encourage the practical development and use of the article, but the first suggestion of the device, method, or principle owes its origin to the realization that an economy of time, of material, of labor, might be effected if it were possible to change or combine present methods by an invention which usually involves within its own construction the necessary functions which, previously undertaken by hand, had increased the cost of production. Industrial progress has been a continuous straining to eliminate from production as far as possible the human element as an energetic force. Where a machine can be constructed to perform by created power functions, one of which hitherto has taken almost all the time and labor of an individual worker, it is adopted. It is simply another illustration of the supremacy of man. He erects the machine which can accomplish far more than he can in a much shorter space of time; then he takes command of the machine. He guides; the machine works.

How far the patent system of this country helped on industrial progress in the early years it is hard to say. That the 14-year term, the inexpensive initial cost of a patent, and the ease with which a grant was secured were all added incentives to taking out a patent can not be doubted. But a long patent list and industrial progress are not necessarily synonymous, especially when it is recalled how great were the numbers of useless patents and of cases before the courts. The average number of patents issued annually from 1790 to 1800 was 26; from 1800 to 1810, 91; from 1810 to 1820, 200; 1826 to 1836, 535. In 1835–36 there were issued 776. The total issue up to 1835 was 9,731, which doubled the number issued either in France or England during the same period. Jefferson,[2] writing to Isaac McPherson in 1813 in regard to patents, said that England was the only country which ever by a general law gave a legal right to the exclusive use of an idea. While other countries had done so in

[1] 24th Cong., 1st sess., S. Doc. 338, p. 4.

[2] Writings of Thomas Jefferson (Memorial edition). Vol. XIII, p. 334 (Washington, 1904).

great cases, generally speaking they regarded these monopolies as productive of more embarrassment than advantage to society "and," he adds, "the nations which refuse monopolies of invention are as fruitful as England in new and useful devices."

With the War of 1812, approaching expediency and policy as well forced the Nation into manufacturing. Labor, however, was very dear, because very scarce. Here was the first economic necessity that called on invention. We had to produce more per unit of labor than Europe because we had fewer units. To make up for the scantiness of the supply we had to increase the individual's productive abilities, and that could be done only by the introduction of the machine. In the years that followed we were able not only to meet our immediate labor demand but to turn off some of the supply to the new channels to which our first manufacturing steps had led us. We had before us the industrial experience of Europe, the hard-fought victories of inventive genius; we had the new land, the untouched wealth of our natural resources, the vigor of the Nation, and its superiority to the war-worn Europeans. It is small wonder that our advance had the celerity of magic. At this period one can not allow that amongst these tremendous factors making for industrial progress the influence of the patent was considerable. In the first place, anyone could have a patent who wanted it, by presenting his application in approved form; secondly, after he got it he could not look for security until he had fought for his right in court. It was to render the patent system truly an efficient aid in the growth and progress of the Nation that the law of 1836 was enacted.

THE LAW OF 1836 AND THE PATENT OFFICE BUILDING.

The law of 1836 reestablished the examination system which, with some changes, has continued in force in the United States to the present time. The value of "examination" over "registration" depends upon the facilities for determining priority and novelty of invention which the Government puts in the hands of a capable examining force. The value commercially of the patent is proportional to the security of its validity, and its validity should be established as a result of the grant. For the grant purports to bear testimony that a search, thorough and complete, has been made and the priority and novelty of the device acknowledged.

The adoption of this theory, of necessity, meant the adoption of a different organization. Moreover, the housing of the Patent Office at this period was such as to render efficient work or even orderly procedure impossible. In the light of these conditions, Senator Ruggles presented on April 28 the bill of 1836.

This bill which became a law July 4, 1836, was considerably longer than any previous legislation and aimed to cover the patent question from the point of organization, procedure, and scope. As finally passed it provided that the Patent Office, to be established in the Department of State, should be in charge of a commissioner appointed by the President, by and with the consent of the Senate. The commissioner, under the direction of the Secretary of State, was to execute and superintend all matters touching the grant of exclusive rights for inventions and copyrights. His salary for such service was the same as that of the Commissioner of Indian Affairs, and the long-sought franking privilege was his. He was to provide for the arrangement and classification of models in such galleries or rooms as would properly preserve and display them and allow for public inspection at suitable hours. He was to cause a seal to be made which, accompanied by the Secretary's signature and his, made the record competent evidence in any court where such record constituted evidence.

As his assistant, the commissioner appointed, with the approval of the Secretary, a chief clerk, which officer performed the duties of the head during the latter's absence. With secretarial approval he could appoint two other clerks, both of whom were competent draftsmen, an examiner of patents, one other clerk, a machinist, and a messenger. The chief clerk was to receive a salary of $1,700; the draftsmen, $1,200; the examiner, $1,500; the additional clerk, $1,000; the machinist, $1,250; and the

messenger, $700. The usual oath of office was provided for; no connection or interest in patent rights was allowed on penalty of loss of position, and the commissioner and chief clerk were to furnish bonds. Accounts were to be rendered quarterly to the Treasurer for all fees or other moneys received. Copies of record books and drawings were to be preserved by the commissioner and sealed with the Patent Office seal. Moreover, copies of such records were to be furnished any applicant upon payment of 10 cents for every 100 work page. A reasonable charge was to be fixed for copying drawings.

Together with the copies of records, etc., was to be retained a register of the patents issued. The patent form was to contain a short description of the invention and the grant for a term of 14 years to the applicant, his heirs, executors, or assignees, of exclusive rights to the use and sale of the invention. In the annexed specification the patentee was to state what he claimed as his invention.

The procedure to obtain a patent was set down in section 6. Specifications, drawings, and a model, if practicable, were to accompany a description of the device in which the manner and process of construction and of use were to be so clearly stated that anyone might be able upon the expiration of the patent term to construct and use the article. These signed by the inventor and attested by two witnesses were to be filed in the Patent Office. At the same time the applicant was to make an oath or affirmation stating his citizenship, and that he believed himself to be the original inventor, and that to his knowledge the article was never known or used before. The applicant having so presented the evidence on the patent desired, paid his fee, and committed in writing to the commissioner a request for such patent, had performed his task. The business of the Patent Office then began.

The examination of records to discover previous invention, publication, or use thereof here or in foreign countries was carried on under the commissioner's direction. For the purpose of adding to the knowledge of the office and affording greater facilities for exhaustive search, a library of scientific works and periodicals was to be maintained. Purchases to the amount of $1,500 were to be made under the direction of the Committee of the Library of Congress. If the device appeared to be original, novel, and useful, the commissioner issued a patent for it. Should he consider that the application did not fulfill the conditions he was to notify the applicant, stating on what grounds he refused the patent and giving such references as would aid the applicant in deciding whether to renew his application or to alter his specifications. Upon withdrawal of an application, $20 of the fee, which for citizens of the United States was $30, was refunded to him. In case of insistence by the applicant, he had recourse by appeal to a board of examiners. The members were to be disinterested persons, appointed by the Secretary of State. One at least, if possible, was to be expert in the particular branch of knowledge involved. Having received from the commissioner a statement of the grounds upon which a patent had been refused, this body informed both sides when they would sit to hear the case. The board, in toto, or by a majority, might reverse the commissioner's decision. Before such a board was named, the applicant paid to the Treasury $25. The decision of the board governed the action of the commissioner in his ultimate disposal of the case.

Should the commissioner find that an application might interfere with one already pending, or with an unexpired patent, he was to notify the applicants or patentees to that effect. After a hearing to determine priority of right or invention persons dissatisfied with the decision of the commissioner might appeal their case under the same conditions as was provided for the settlement of patent-right cases; i. e., by a board of examiners. The law, however, excepted from its interference provisions the rights of original inventors who had taken out a patent in a foreign country within six months preceding the filing of the specifications and drawings in the United States Patent Office, even though the letters patent had been published.

The commissioner could issue a new patent where an original one had proved invalid from defective specifications or from an overstatement of invention in the claim of the inventor, provided the error had occurred without fraudulent intent. Such reissue necessitated an additional fee of $15 and was made for the unexpired period of the term. In any litigation the second patent was to have equal validity with the original. Should a patentee upon further improvement of his invention desire to append the specifications and drawings thereof to the original patent, the commissioner was to allow such addition after application had been made in the same form as for an original patent and a fee of $15 paid into the Treasury. As evidence of such addition, he recorded the time of its annexation in the margin of the patent and so gave to the additional claim the same effect as if it had been included in the original.

The commissioner could extend the term of patents for seven years in particular cases. Upon receipt of a written application from the patentee stating the grounds for the extension and of a fee of $40, the commissioner was to publish in one or more principal newspapers of Washington and elsewhere in those sections of the country most adversely interested in the extension notice of the application and the time and place of hearings to be held thereon. The board provided to hear such cases was to consist of the Secretary of State, the commissioner, and the Solicitor of the Treasury. If it appeared to them that with due regard to public interests the patentee had not been reasonably rewarded for his invention and that without fault on his part, the commissioner was to renew the patent for seven years. This renewal had the same effect as if the patent had been issued originally for 21 years. However, application for extension had to be made before the expiration of the original term.

Provision was made for inheritance and assignments of rights, alien patent rights, and for protection by use of the caveat. In case of the death of an inventor or applicant before the application or issue had been made, rights of applying or obtaining the patent were to pass to the executor or administrator in trust for the heirs or legatees. Their rights in the patent were as full and subject to the same conditions, limitations, and restrictions as if they were the original patentee.

Moreover, every patent was assignable in whole or in part by written agreement or instrument. Such assignment was to be recorded, as were all other grants in the Patent Office, within three months from its execution. The assignee paid for such record a fee of $3 to the commissioner.

The law stated that any person or persons fulfilling the conditions of specification, claim, etc., could obtain a patent if the commissioner was satisfied that his patent was novel, original, and useful. However, there was some distinction made between foreigners and citizens of the United States. In making an oath of affirmation the applicant stated his citizenship. If he were a citizen of the United States or an alien resident one year in the United States and taking an oath of intention to become a citizen thereof, he paid a fee of $30 for his patent, if a subject of Great Britain, $500. All other foreigners paid $300. This sum went to constitute a fund for clerk hire or other expenses of the Patent Office, and was called the patent fund.

To the citizen and the alien resident one year and declaring his intention to become a citizen was extended the protection of the caveat. Section 12 provided that should they invent any new art for which they desired further time for improvement, by paying a fee of $20 to the Treasury, they could file in the Patent Office a caveat setting forth the character and purpose of their intention and asking for protection of their rights until the maturity of their invention. This caveat was filed in the secret archives of the office. If within a year of filing the caveat another application was made it became the duty of the commissioner to retain such application in secret and to notify the holder of the caveat in order that he might, within three months of receipt of such notice, file his description, specifications, drawings, and model.

Then interference proceedings took place if the commissioner decided that the claims of the applicants were in interference.

Resort to appeal from the decisions of the board of examiners to a competent court was provided in cases of infringement to recover damages, or in cases of interfering patents. All suits arising under the patent law were originally cognizable, both in equity and at law, by the circuit courts of the United States or any district court having the powers and jurisdiction of a circuit court. The same courts had the power to grant injunctions for the protection of the rights of the patentee or inventor. In infringement cases where a verdict was rendered for the plaintiff, the court could award damages to any amount above that found to have been actually sustained by the plaintiff, not exceeding, however, three times the amount, with costs. Defense in such cases was permitted on the general issue and might submit any evidence to prove that the description, specifications, or claim of the plaintiff either did not fully disclose his invention, or claimed too much, with the aim in either case to deceive the public; that the patentee was not the original inventor; that the device had been previously disclosed in a publication; that it had been on sale or in public use with the inventor's consent, or that the patent was obtained by fraudulent means. If the plaintiff failed to substantiate his claims, the verdict was given in favor of the defendant, with costs. If he failed to sustain his action in part, but it appeared that the defendant had violated any part which the plaintiff truly claimed as new, the court could award whatever appeared just.

In interference cases where a board of examiners had refused a patent because it would interfere with a patent previously granted, recourse to a bill in equity was the remedy. The court was left free to decide against one or all of the claims made by the applicant or to adjudge him entitled to a patent, which the commissioner was compelled to issue on presentation of the adjudication. The grant of this adjudication, however, could not go further in its effect than the parties to the suit.

It was provided that final action might be taken in the Supreme Court of the United States upon a writ of error or appeal. Procedure was governed by the same regulations as obtained in all other cases brought before that court.

The judicial conduct of the patent system has worked out quite contrary to the expectations of the drafters of the bill, as they were stated by Senator Ruggles. The law provided that "no opinion or decision of any board of examiners, under the provisions of this act shall preclude any person interested in favor of or against the validity of any patent which has been or may hereafter be granted, from the right to contest the same in any judicial court, in any action in which its validity may come in question." [1] This provision has paved the way for all the litigation of the past years, but those who were responsible for it never intended the "right to contest" to be so generally used. Senator Ruggles had thought to invest the commissioner with judicial as well as administrative power. The right of appeal to a board of examiners was provided simply as a concession to those who feared an unrestricted grant of power might make an autocrat of the commissioner. That the board of arbitrating examiners was not intended to be a usual part of patent procedure is clearly indicated in Senator Ruggles's report. In referring to the check which must be placed on the granting of patents if a correction of evils was to be effected, he said:

"It is obvious that the power [to judge of inventions] must, in the first instance, be exercised by the department charged with this branch of the public service. But as it may not be thought proper to intrust its final exercise to the department, it is deemed advisable to provide for an occasional tribunal to which an appeal may be taken. As a further security against any possible injustice, it is thought proper to give the applicants in certain cases, where they may be an adverse party to contest his right, an opportunity to have the decision revised in a court of law." [2]

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[1] See sec. 12, law of 1836.

[2] Report on condition of the Patent Office, 24th Cong., 1st sess., S. Doc. 338.

Later, discussing wherein the bill was expected to improve the patent situation, he laid special stress on the benefit to be derived from granting to the commissioner the power to reject applications for want of novelty. To his mind such a grant would relieve effectively the meritorious inventor and the general public from the serious evils resulting from the indiscriminate grant of patents whereby interfering claims were created, fraudulent speculators in patent rights encouraged, the country deluged with worthless patents, and the foundations laid for endless litigation.

If the extent to which the judicial power of the commissioner was intended to reach is not clearly indicated by the above, the estimate of Senator Ruggles as to the probable frequency of appeal, leaves no doubt in the mind as to the intended use of the board and the court relative to departmental action.

"In 19 cases out of 20, probably the opinion of the commissioner accompanied by the information on which his decision is founded will be acquiesced in. When unsatisfactory, the rights of the applicant will find ample protection in an appeal to a board of examiners, selected for their particular knowledge of the subject matter of the invention in each case." [1]

The law was calculated, without harm to real inventors, to diminish the number of patents. This would have its advantage, since there would be greater confidence in those which were granted. The law of 1793 had waited until infringements, frauds, and mistakes in patent issues had occurred before it acted, if it did not in most cases aid in bringing about the very occurrence. To offer damages as a remedy was neither adequate nor certain. The drafters of the law of 1836 sought to make litigation unnecessary by refusing grants on interfering patents—in other words, they intended that the original and final word on patent grants should be spoken by the Patent Office.

However much one may differ as to what agency within the office should speak the word, the soundness of the result which they sought to obtain can not be gainsaid. The administrative character and obligations of the commissioner's position have grown tremendously, as would be the case with the development of any great business. The outline of policy and general superintendence of the office would seem to demand all of the incumbent's time. Questions of such purely technical and legal nature as arise in patent cases, he could not be called upon to decide from personal acquaintance with the case. It would seem as if the qualification for hearing and deciding such points of law and invention were in all likelihood not those of an administrator and indubitably not those of one whose time was so consumed in the matters of office detail. A trained legal and scientific board would more possibly fulfill the exacting nature of the requirements. But that the patentability of a device should be settled when and where the patent is granted is indisputably the logical sequence of work and responsibility therefor. To cast upon the patentee, the courts, and indirectly the public, the correction and completion of work for which the patent stands as evidence that that very work has been done in the office is not only tremendous extravagance but a most senseless mode of business procedure. However the law of 1836 worked out, the principle back of it was sound. It has been left to the legislation of the future—an early one it is to be hoped—to put this theory into actual practice—to eliminate litigation "before it begins."

The new law had not been in force six months when the entire office was destroyed by fire on December 15, 1836. A Senate committee was appointed to report [2] on the cause and extent of the loss, and to recommend some means of establishing evidence of property, as all records, drawings, specifications, and descriptions had been destroyed. In making provision for the restoration of the records and models which this committee embodied in the act of March 3, 1837, the right to make a disclaimer was allowed to those patentees who inadvertently asserted too much for their patent. This disclaimer was attached to the patent upon payment of a fee of $10. The law

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[1] Report on the condition of the Patent Office, 24th Cong., 1st sess., S. Doc. 338.
[2] 24th Cong., 2d sess., S. Doc. 58.

also increased the force by providing for two examining clerks instead of one and a copying clerk. The patent fund was placed at the disposal of the commissioner for the expenses of the office. A yearly report and account of such expenditures was to be made by him to Congress together with a list of patents issued and expiring during the year.

The restoration was effected by the cooperation of the clerks of the United States courts in submitting statements of copies of patents on file in their several offices and obligatory renewal of patent record by the patentee. Duplicate models were secured through the activity of a committee especially appointed to make the best of the most important inventions. Additional force was necessary to put the office in working condition, and even then the business of restoration was not actually completed until 1849.

It argued well for the law of 1836 that new and untried as was the system it introduced it could maintain itself and even draw the commendation of the Europeans in the face of the disorganizing influences resulting from the fire. The law was strong, however, in that it made for the organization of the patent interests of the Government on a business plan headed by administrative and accountable officers. The theory at least which lay at the foundation of the work tended toward increasing development of business procedure. No more could the loose and disconnected organization, which a purely clerical procedure makes possible, prevail. There was something more to do than register, now "examination" was the business of the office. That meant special qualifications in the force, particular methods in business procedure, constructive and cooperative work throughout the office. The theory was good; it did not in practice meet all that has been claimed for it, but it was immensely superior to the old system. Fortunately new quarters were already under consideration when the fire of 1836 occurred, so that the confusion and loss were not so irreparable in their effect as they might have been.

It had been provided in section 7 of the additional appropriation act of July 4, 1836, that the President should cause to be erected a fireproof building for the accommodation of the Patent Office. It was intended that this new building should be for the exclusive use of the Patent Office and provision was made for its erection out of the patent fund, $108,000 being the limit set by Congress. The site chosen was that of the present Patent Office. The building comprised that part which now faces on F Street not including the Seventh or Ninth Street wings, which were additions of a later date. This main portion of the Patent Office was not completed until 1840 and the total expense far outran the first appropriation made. The Commissioner of Public Buildings complained that while Congress limited the amount that should be expended, it in no way curtailed its specifications as to materials to be used. By a compromise of demands and economics the building "sufficient for the wants of the Patent Office for many years," as the commissioner thought, was erected for $422,011.65. The commissioner, however, in estimating the sufficiency of the needs of the office specified that it could not accommodate "other objects than those contemplated in its erection." It was in his mind to keep the models from blocking up the new quarters when he suggested that the property then occupied by the Patent Office could furnish adequate space for the National Gallery, mentioned in the patent legislation of 1836.

The models, however, so accumulated in the new building that in 1844 more room was imperative and from that time until 1849 requests to Congress were made annually, asking for the extension of the then present quarters. Finally, on March 3, 1849, an appropriation of $50,000 was made to begin the east wing. The total cost was $600,000, of which $250,000 was taken from the patent fund. Shortly after the completion of the new section, still more room was required, and in August of 1852 Congress provided for the erection of the Ninth Street wing, appropriating $150,000 to begin with. It was deemed best to plan for the completion of the entire structure and so the west wing was finished in 1856 at an expense of $750,000, and that part

facing on G Street begun. In 1867, this last was completed for $575,000. The furnishings and repairs from that time until the second fire on September 24, 1877, brought the total amount close to $3,000,000.

LEGISLATION AND GROWTH, 1837 TO 1871.

LEGISLATION.

Patent legislation from 1837 is of an amendatory or defining character and does not affect the principles established by the law of 1836 though it materially changes the procedure in some instances.

The law passed March 3, 1837, aimed to repair the loss by the fire, and provided for the reissue of patents and the issue of patents to the assignee of the inventor. It also allowed a disclaimer to the patentee innocently claiming too much for his device, leaving to him the validity of the patent on so much as he had invented. But no patentee could recover costs from a defendant unless such disclaimer had been filed previous to the commencement of the suit. It provided for an annual report by the commissioner to Congress.

In 1839 a law enacted that a digest of patents be kept and defined more clearly the clause in the law of 1836, providing for the taking out of a patent here after a foreign patent had been granted. A patent could not be refused on the ground that the same patent had been issued abroad more than six months prior to the application. Of course, exception was made if the article had been introduced into public or common use in this country. The patent ran 14 years from the date of the foreign grant. This same act provided that two years' public use of an invention before application for a patent did not invalidate the same. The right to a bill in equity was extended to all to whom patents had been refused by the commissioner or the chief justice of the District of Columbia. In cases where previously appeal had been allowed from the commissioner to the board of examiners, such cases were thereafter to be taken direct to the chief justice. Hereafter the commissioner reported on the agricultural condition of the country and this work occupied an important place in the Patent Office activities until 1861, when the commissoner was relieved of the report.

In 1842 the law made designs patentable for a term of seven years at one-half the fee requisite for a mechanical patent. The conditions of citizenship and those pertaining to aliens obtained for design patents. Hereafter all goods on which a patent had been secured must bear the date of the grant, and failure to do so entailed severe penalties. Nor might anyone other than an owner of patent rights, mark patented articles either "patent" or "patentee." Penalties were attached to this prohibition.

Up to 1848 the power of extending a patent had been invested in a board, as constituted by the law of 1836, to include the Secretary of State, the commissioner, and the Solicitor of the Treasury. In 1848 the commissioner alone exercised this power and continued so to do until 1861, when Congress took to itself the grant of extension which henceforth could be obtained only by an act of special legislation. The rates for recording assignments which had been changed by previous enactments were fixed at $1 for 300 words, $2 for 300 to 1,000 words, and $3 for over 1,000 words.

In 1849 came the creation of the Department of the Interior and under it was placed the Patent Office. As early as 1852 complaints were made by the commissioner that the Patent Office has no more logical connection with the department than it has with any other; that it suffers with all the inconveniences and embarrassments of such relation, but gains none of the advantages. This idea has continued until the present time. It is often recommended that the office be made an absolutely independent bureau, whose head shall be appointed for life. The English hold this idea too. In 1904 Mr. Charles D. Abel, in his discussion which so largely affected legislation on the English patent system, strongly favored the independence of the office of secondary authority. He would have the comptroller general, as the chief official is designated,

responsible to the Cabinet and Parliament, nor does he fail to criticize us for the subordination of our office. This theory, of course, is based on the supposition that the head of the Patent Office is of necessity an authority on patents, scientifically and legally. As a matter of fact the position of chief becomes more and more administrative in its demands as the office increases. It is an impossibility that an individual should adequately fill the position of controlling head, supervising the procedure of the office, outlining its policies, and in addition stand ready to give decisive opinions on the multitude of cases presented to him. Even were it possible to undertake more than the administration of the office the cases coming before him would embrace every possible phase of patent law and technicality. No one individual could hold himself qualified on all such questions. The difficulty would be to determine the line where the commissioner ceased to be an authority. In short, it may be said that the welfare of the office itself has come to demand imperatively that precision of conduct and machine-like regularity which ought to proceed from responsibility of the organization to a responsible head. On the other hand, the patent interests and problems which the office undertakes to protect and solve demand with increasing force the deliberation and exchange of ideas which must be brought to bear on such a widely varied and far-reaching subject as patents if intelligent conclusions are desired.

The subject of appeals began to occupy attention at this period and in 1852 an act allowed cases of appeal from the commissioner's decisions to be taken to the judges of the Circuit Court of the District of Columbia, as well as to the chief justice. Finally, in 1861, appeals from the decisions of the circuit courts arising under the patent or copyright law could be carried, regardless of the sum involved, to the Supreme Court of the United States. This general encouragement of litigation through the provision for additional appeals has involved the Government, the courts, and the individual in unlooked-for expenditure. Nor has it resulted in the protection of the inventor's rights, as was the intention of the laws granting the right of appeal to the courts. Litigation is extremely costly; the man of small means, and this will generally include the individual inventor, can not continue his case to final appeal without almost certain financial ruin, while the company or corporation can not only carry its case to completion and hope thereby for a verdict in substantiation of its lawful rights, but by delaying and putting off the case use the right of appeal to defeat justice in contests with a weaker opponent.

The act of March 2, 1861, was the most important legislation of the period. As has been stated, the grant of extension was henceforth to be the result of a congressional act. The patent term was lengthened to 17 years and the fees changed. Upon filing an application one paid a fee of $15 and when the patent was issued a fee of $20, nor was there to be any discrimination against foreign applicants whose country did not discriminate against our citizens. Design patents were written for 3½ years, for 7 years, and for 14 years, according to the desire of the applicant. Moreover, one might obtain a seven-year extension. The fees were fixed at $10, $15, and $30, varying with the length of the term. No longer was the addition of improvements to the original patent allowed. This right had been included in the law of 1836, but after 1861 a new patent had to be secured. Failure to mark an article patented prevented one from recovering damages, but the penalties therefor enacted in 1842 were repealed. One of the most important provisions of the bill was that establishing a permanent board of three examiners in chief. After an application had been twice rejected by a primary examiner an appeal might be taken to this board. By the law of 1866, the fee of such appeal was fixed at $10. From the decision rendered by it an appeal was allowed to the commissioner upon payment of a fee. The board was to be appointed by the President with the consent of the Senate and was to include persons of competent legal and scientific ability. To this board the commissioner might refer any applications for extension of patents or any other matters in which he desired its assistance. The board was subject in its action to the rules of the commissioner.

The years from 1862 to 1866 brought several enactments in regard to patents. After 1863 a patent was withheld and the invention became public property if the final fee of $20 was not paid within six months of the date of patent allowance. The act of 1864 amended this provision, allowing payment within six months of the passage of the act, but no one could be held for damages for using the patented article in the interim. The act of 1865 gave to the inventor or assignee the right to apply for a patent within two years of the date of allowance, but the provision as to damages set forth in the law of 1864 was included here.

By the act of July 20, 1868, the patent fund which heretofore has been at the disposal of the commissioner for Patent Office expenditures was turned over entirely to the Treasury. All moneys coming to the office were to be given over to the Treasury and Congress appropriated in the usual manner for the bureau.

It will be seen from the general character of the legislation of the period what were the main issues in the years following the establishment of the new system. The great change effected by the law of 1836 had been the installation of the examining system; the prime difficulty of future commissioners was the maintenance of a staff of examiners equal in number and efficiency to the demands of the system. The constant plea is for more examiners at better salaries. The protestations of the chiefs showed that at least they realized the high caliber of the personnel necessary to effective conduct of the office. The demand for more examiners and for increased salaries by which to establish a higher standard in the office and to make for permanency has been the subject of recommendation in the annual reports of to-day. That this has been the remedy applied since 1840 to meet the defects of the administration of the system and that this remedy has not effected a cure would seem to prove that we have not been getting at the source of the trouble. Alleviation is a justifiable policy provided fundamental conditions are sound. But after 70 years alleviation has left us where we started, and we must naturally conclude that the difficulty is fundamental after all. Undoubtedly in the early years the personnel was thoroughly inadequate to the amount of work in the office. Later the salaries by gradual increase became sufficiently good to draw a very fair grade of intelligence. To-day the examining force comprises 43 principal examiners and 334 assistants. The standard of the personnel is not only unquestionably good, but, what is still more conclusive, it is the best that the Government can get. The men at present are drawn from the ranks of graduates of the best technical schools of the country where the standards maintained require more than mediocre ability on the part of the student. If the office, therefore, stands firm in these requirements, it claims and secures all that can be hoped for in the way of a qualified examining force.

In answer to the criticism that the salaries paid by the office do not foster permanency; that they can not compete with the financial inducements of private business, it may be said that the work of the office holds for the ambitious no promise of a career approximate to that made possible in private enterprise. The Government, therefore, would not be justified in attempting to compete with the salaries offered outside. The nature of the work called for would not be worth what was paid. At present, the salary received is higher than that usually obtained by the recent graduate. Later, when the examiner has learned all that Patent Office training has to give for his needs, no salary which the Government could afford to pay would be commensurate with outside inducements.

The remedy for the insufficient force and for its yearly deprivation of those who are becoming most expert in the work lies in the reduction of the system of examination to as near perfection of detail as is possible, and promotion by a system of examination, whether that be an examination of particular and technical character or an examination of an efficiency record which should note all cases of appeal or review wherein the examiner was at fault. The perfection of the examination system should characterize classification, digesting of information, and strict specialization of the duties of the

examiner. In so doing, permanency is shifted from dependence upon the individual to dependence upon the system. Moreover, responsibility would be fixed and an economy in time and labor effected. If the better organization of the examining force were felt in no other way than in securing absolute thoroughness of search, a vast amount would be saved to the Government and the public in reducing the occasion for disagreement between the inventor and the office. And after all there is involved with this problem of examination procedure no abstruse or incalculable proposition. It is as definite and soluble a question as an arithmetical problem. Reduce all knowledge on a given principle to digest form and add to that form the developments of the future. The difficulties of such a reduction are not in any way minimized; they are acknowledged to be a task of some years, but they are not impossible of solution.

Another considerable question of this period was that of the final establishment of the originality of a patent. The claim has been made again and again that there ought to be some point at which the question of the original inventor is settled for all time. Moreover, the power to repeal a patent wrongfully issued would have a marked and beneficial effect in removing causes or excuses for litigation. In the report of the commissioner for 1845 these recommendations were urged and have continued to appear with almost annual regularity down to the present time. It has been charged with considerable justice that this omission of any provision for repeal is an open channel for infringement and a great injustice to the true inventor.

In the early forties came the protests against the contrary decisions in the circuit courts—protests which are voiced to-day in the agitation for a court of patent appeals. The fact that such demand is so insistent to-day shows how far we have drifted from the intention of the framers of the law of 1836, who estimated that perhaps in one case in twenty the applicant would not abide by the decision of the office.

In the period immediately following the law of 1836 and in fact up to 1853 the popular attitude toward patents was unfavorable. A patent was a monopoly and as such legitimate prey for spoliation. Naturally with such hostile attitude toward the patent right it is quite useless to look for any liberality toward the alien or foreign inventor. But in 1853 the commissioner proposed an abolition of all geographical discriminations in the grant of patents, fixing the fee at such an amount as would remunerate the office for the work it had performed. Any other course he felt to be unjust in principle and unsound in policy. A continuance of the recommendation brought a change in 1861, when the patent law of that year abolished discrimination in cases where the applicant's country did not discriminate against a citizen of the United States.

The question of grant of equal patent rights to foreigners has been discussed with increasing interest abroad. It embraces the advocacy of the compulsory working of patents and the alternative policy of compulsory licenses. England has been the great disciple of the compulsory working of patents, but after installing the system has been vastly disappointed in its results. The subject has occupied considerable time and thought in the patent conventions and treaties of the last 20 years. But it would seem as if the compulsory licensing of patents would accomplish all that can be hoped for from the compulsory working idea and would keep free of the injustice which the latter could easily impose upon the individual applicant. In fact, the obligatory working of patents lends itself to monopolistic abuse. The man who desired an independent enjoyment of his patent but had not sufficient means to work it within a prescribed period principally in the country in which the patent was granted—and this is what a compulsory working of the patent means—would be driven into the arms of the corporation, which could afford to work the device for a time even at a loss. Moreover, it is quite possible, according to many English critics, that the company might pretend or go through the motions of working the patent and in truth not actually work it at all. Should an individual or a company establish their business and find the time not ripe for the device, production might be at too great a present sacrifice to allow of continuance. The only course open would be

cessation and so loss of patent rights. The compulsory license has the advantage that it allows the patented idea to lie until there is a demand for it. The difficulty which it presents, however, is the determination of license rates. Who is to be regarded as qualified to fix them at a just figure? If one answers "The court," then is the business of patents not only further involved in litigation, but business generally is drawn into closer relations with dependence upon a part of our political scheme, which moves so slowly as to be an actual danger to the individual's financial welfare.

The matter of procedure which had a place of great importance during this period was that of appeal from the examiner's decision. In 1855 the commissioner called attention to the prime necessity of making the first examination certain. In many cases where the applicant resided a considerable distance from Washington a rejection by the examiner was almost sure to be final. It was in regard to review of the decisions of examiners that the board of three, as provided in the law of 1861, was first suggested. The commissioner states that it is an impossibility for the head of the Patent Office to give personal consideration to all cases of rejection and that if three persons could be found of such rare ability as is required for the work of review considerable headway in perfecting the examining system might be made. However, he was dubious as to the likelihood of finding any such board.

On his own initiative, in 1857, the commissioner began to appoint temporary boards to examine appeals from the decision of primary examiners. These boards, while relieving the commissioner, developed difficulties of their own in the variability and independence of their decisions. In 1858, Commissioner Holt made the board permanent. Their report and recommendations were presented to him for approval. The results of their work gave great satisfaction. The examiners were taken from their regular duties to form this board whose legalization was sought by the commissioner in 1858. Satisfaction continued to result from the work of the board and it was given the force of law in the act of 1861.

Other matters of concern in these years were the power to summon witnesses, the form and scope of the report of the commissioner, publication of specifications and drawings, and the revision of the patent laws. This last had been urged since 1845. The law as it stood was full of ambiguities which left the inventor and the lawyer in a quandary as to the applicant's rights. In 1868 revision of the laws looking to proper organization was strongly urged. However, the work of revising and codifying the patent law was not undertaken until 1870, when Mr. Jenckes brought in a bill providing therefor, which became a law July 8, 1870.

By the revision no new offices were created, although the salaries of certain classes of examiners were increased. The appropriation act for 1871 had already created the office of assistant commissioner, so that the statement so often found that the Jenckes bill of 1870 created the office is in error. The law granted to the commissioner the power to regulate the conduct of the office and gave to the rules of practice the force of law. The power to regulate, however, was subject to the Secretary's approval. The weekly publication at this time of a patent list was the beginning of what later became the Official Gazette. The examiner of interferences, an office created by the commissioner to expedite decisions, now by law determined questions of priority.

GROWTH AND EFFECT OF SYSTEM.

The years 1837 to 1877 saw a tremendous growth in the Patent Office business. Up to 1837, 11,445 patents had been issued, with a profit to the Patent Office of $156,907.73. The increase in the issue beginning with 1839 is almost invariable and very marked after the early fifties. Naturally a slight decrease is observable during the Civil War; but the immediate rebound which came about before that period was ended and the remarkable advance from 1865 to 1876 are worthy of note.

In 1865 there were 6,616 patents issued; in 1866, 9,450; in 1867, 13,015; in 1868, 13,378; in 1869, 13,986; in 1870, 13,321; in 1871, 13,033; in 1872, 13,590; in 1873,

12,864; in 1874, 13,599; in 1875, 16,288; in 1876, 17,026. In that period the surplus had increased from $74,592.50 to $105,445.05.

It is not to be inferred that this increase in inventive activity was due wholly or in major part to the encouragement of our system of patent issue. There were forces at work to make invention a necessity as an outlet. Incentive besides that offered by a patent was not lacking. That it occupied a place as an aid is not to be denied, but the demands of the economic elements, land and labor, and ultimately capital, made invention not only potentially profitable but actually necessary.

The increase in our patent issue from 1790 to 1836, an increase remarkable in so young a nation, is easily accounted for when we come to consider the unsettled political conditions which made the natural industrial progress of Europe an impossibility. Up to 1815 the French Revolution and the Napoleonic wars had involved the Continent in a ruinous entanglement that precluded sufficient production for home consumption. John Adams had said that the United States was essentially agricultural and would not manufacture for itself "these thousand years." But by the end of the War of 1812 we had begun to prove how hasty had been his judgment. Up to that time our main interests were agricultural, and our inventions had followed the line of our progress. With the growing difficulty of steering a middle course through the embargoes and navigation acts of the European belligerents and our own anxiety to bid England defiance, a policy of dependence on foreign markets for manufactured products became more and more irreconcilable. We were forced to produce for ourselves, and the result was an unprecedented development of ingenuity. Invention showed itself in transportation, in agriculture, in factory machinery for making fabrics, in construction of transportation aids, in power production, and in the allied arts, such as chemical composition and mathematical instruments.

In the years following 1815 the United States had advantages over Europe which facilitated our industrial progress. Europe was worn out with the ravages of war. Her labor supply was not only depleted in numbers and strength, but the spirit which had made the French Revolution inevitable had effected in such labor as was available a disorganization which time alone could correct. When we add to these conditions the decrease in agricultural production and the chaos of debt and financial difficulties which embarrassed capital, we can not wonder at the ease with which American manufacture made its start and became a competitive force in the markets of Europe.

If we begin to look for reasons for the advance from 1837 on, we must give full credit to the industrial changes and to economic and geographic conditions at work during those years. The United States began to open up its vast natural resources. It possessed untold and apparently inexhaustible wealth in its lands and their products. The timber had but to be cleared, the soil worked from the surface, the mines opened, to give a return vastly superior to the expenditure. Our labor supply was so small as to tend to check progress. To make up for this lack, invention was made to substitute new methods. The era of the factory came, setting free labor which readily found its place in channels often opened by the very change which had cast it off as surplus. The steady flow of immigration and the marked increase of population caused by the fortunate conditions of expansion—all these elements combined to make a compelling force for production on a scale beyond the ability of human energy to effect if unaided by mechanical power. It is not denied that a patent system is an incentive to invention. It is such under conditions where competition is the ruling factor in production. But granted a demand superior to the supply, given conditions where amouut of production is the main concern, where, as in those earlier years from 1836 to 1858, there is room for everyone in meeting the demand created by the changing conditions of industry, competition is relegated to second place and with it the importance of the patent. Invention will ensue regardless of the patent advantage under such contingencies, and especially was this true in the United States, where there was the additional problem of high wages and insufficient labor supply.

The competitive era begins in 1850. At least the period from 1850 to 1860 shows the beginning of corporation form of manufacturing. Production on a large scale makes for combination for the sake of economy. But there is another element which enters very largely into the reasons for the corporate form of business organization, and that is competition. Combination can effect economies in cost of production; it can also determine the selling price. Its relevancy to this discussion is that combination in its fight against competition never fails to use any means by which it can gain an advantage, to the end that it may sell at a reduced price or at an increased gain. Therefore the patent grant has for the business firm, the corporation, the greatest interest, for it affords a secure and final advantage during the term of the patent. It is to be noted that the per cent of increase in patent applications for the years following 1853 to 1876 is remarkable. The increase in the number of firms bears constant decreasing rates to production. This continues to be true up through the early eighties, and gave rise to the impression which now is a firmly established conviction of many inventors, and to a degree of the general public, that the patent is an added weapon in the hands of corporations by which prices are fixed, competition checked, and trade restrained.

The patent grant during this period under discussion, viz, 1837 to 1877, held for the individual inventor a promise of reward which, whether generally realized or not, was an incentive to struggle on, even when the workings of the patent system seemed to fail him again and again. The example of the wealth amassed by an individual inventor was sufficient to lead a hundred others to work on for a lifetime, thinking one day a like fortune would come to them. Those were days when an invention was regarded as a discovery. Now the field of science and the arts is at least sufficiently explored to give a degree of certainty as to the success of an invention. Not that inspiration has nothing more to give. There is still plenty of opportunity for the genius of the individual inventor. But it ought to be remembered in decrying corporative privilege and monopoly and their consequent check on invention that by developing this very certainty corporate production has created the conditions, provided the incentive, and made a market for that vast number of inventions of parts and improvements which, if ever invented, would have gone begging for a use or a purchaser without the corporate system.

That it is possible to use the right of patent for purposes of illegal restraint is not denied. It is not only possible, but undoubtedly has been done. The envelope trust is said to have raised the price of that commodity 20 per cent by its strength derived from control of patents on envelope machinery.[1] The point for the reformer and the legislator to keep in mind is the protection not so much of the individual inventor but of the general public from the abuse of a right by a corporation whereby prices are illegally fixed or industry defrauded for a term of years of a better or more economical process of production through the monopolistic control or shelving of patents. In fact, in the controversy between the inventor and the capitalist it is the public who is the innocent sufferer. Theoretically and collectively the inventor is the victim of the powerful corporations. Practically and individually he is most eager to sell his invention to anyone who will take it off his hands, and at that he favors selling to the corporation. No law could protect an individual against himself, nor would such paternalism be desirable. Given a system as good as the one which has been in force in the United States for the last 76 years—a system which Germany, Canada, and the South American Republics have copied in whole or in part and which other countries have envied us—we have only to provide for an efficient and logical method of administration, scientific procedure in the business of the office, and a fully qualified personnel at work under such conditions of housing and division of labor as will make for the highest degree of efficiency and personal responsibility.

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[1] Monopolies and the People, Baker, C. W., New York, 1909, p. 91.

THE PATENT OFFICE, 1872 TO 1912.

In 1872 Commissioner Leggett, convinced that the organization of the Patent Office was not producing the results of which the examination system was capable, recommended to the Secretary of the Interior certain changes, which the latter indorsed in his letter to the President. The changes proposed necessitated legislation, and were forwarded with Executive approval to Congress for consideration and action.

The difficulties seem to have been in the wrongful issue or rejection of patents and the number of tribunals passing final decision on cases in dispute. Errors in issue and rejection occurred through the lack of supervision or review, unless upon the appeal of the applicant of examiners' decisions. Supposing there to be no question of individual honesty of purpose, there was certain to occur errors of judgment. In the earlier days the business of the office permitted the review by the commissioner of the reports submitted by examiners on all applications coming before them. The two were a mutual check—the examiner was held up to a standard of accuracy and honesty, and the commissioner was restrained by the examiner's knowledge of the case. By 1872 the business had long since outgrown such close relations of the commissioner to individual grants. Appeals and instances brought specially before his notice were the only cases where he exerted personal supervision of a grant or rejection.

Such absence of check was incapable of refuting the charges of corruption which were so frequently made. The result was seen in wavering public confidence and doubt of a patent's validity. Though it was not possible to return to the policy of supervision by the commissioner, the corrective was to be found in establishing an organization in which the several parts would act as checks, one on the other. This was to be done by separating the technical examination from the consideration of legal questions. The action of two officers, therefore, would be requisite for each application. They would act separately and be responsible to the head of the office, thus effecting a beneficial check on ignorance, carelessness, or fraud.

The commissioner recommended a reassembling of the 145 classes into which the 7,500 subjects of application were divided under 9 groups, each of which would contain such classes as were sufficiently analogous to warrant such grouping. To this scheme of subject class and group he proposed to adapt the examining force. Dispensing with the three examiners in chief and the examiner of interferences, he thought to place a competent person in charge of each of the nine groups. From the examining force there would be named an assistant to each of these nine chiefs. Amongst these nine divisions would be apportioned the remaining force. Provision for increase of salaries was made by which chiefs were to receive $4,000; assistants, $2,500; and examiners, $2,000.

The examiner of interferences could be dispensed with, because the chief of the division could exercise better judgment than he in a given case. Technical knowledge was quite as necessary as legal ability. Moreover, the chief might make himself an expert on the classes embraced by his group. No one man could hope to become an authority on the entire 145 classes.

The influence of the board of appeals, in that it can have no supervisory power and acts only upon appeal in rejected cases, had been, thought the commissioner, scarcely perceptible. Having no effect in preventing the issue of bad patents, the board, as an organizational unit, was inadequate.

All decisions were to be passed on by the chief of a group. Appeal therefrom was to be had before a board consisting of at least three of the chiefs. The officer appealed from could not sit as a member. The board was to be permanent, yet its membership changed often enough to prevent conflict with regular duties and to develop equally the abilities of the members for the particular requirements of the board. Over this board the commissioner would exercise supervisory and appellate powers.

There was to be no direct access to examiners by attorney or applicant. This would save time and leave the examiner free in making his report. The office itself ought

to be separate and independent, and to this the Secretary gave his approval. However, nothing was done by Congress, and the recommendations of commissioners to provide for better review and supervision of patent issues or rejections continued to be made.

In 1877 occurred the second fire in the Patent Office, but the damage was not so considerable that it could not be repaired. Appropriation was made and a committee on reconstruction appointed, which made its report on the work assigned to them in 1878. From this time the reports are never quite free of the complaint of lack of room. After the Secretary of the Interior had by congressional authorization rented buildings in which to house the various bureaus then encroaching on the Patent Office, there is but a slight interval, and the lack of space becomes an issue again, until at the present time conditions are so crowded and unsafe in the building that no possible remedy of conditions can be effected until Congress legislates the office into suitable accommodations. A new building is imperative.

Beginning in 1877 comes the demand for a court of appeals in the office. In urging it the commissioner said that not only had his duties become more onerous, but they were more and more incompatible. The board of examiners, through its lack of permanency, was not giving efficient aid. This resulted in the presentation to him, by appeal from their decisions, of a mass of cases having no basic policy or theory in the judgment thereof.

Revision of the law as an escape from the inconsistencies then embarrassing procedure brought the matter before the congressional Committee on Patents in 1878. The subject of revision was again considered by a board of commissioners appointed under the act of July 4, 1898. This last revision was the result of the Convention for the Protection of Industrial Property concluded in Paris in 1883, to whose provisions we subscribed in 1887.

In the early eighties, considerable attention was given to the need of increased force and more room, to the date of patents and the limitation of the term in the United States to the period covered by a foreign patent. This was the time of Senator Platt's interest in patents and his views are given in his speech in the Senate on March 31, 1884.

The delay of applicants in prosecuting their applications had become so dangerously near an abuse that in 1887 the commissioner states that legislative action is necessary to prevent rich inventors or capitalists, to whom the inventor assigns his patent, from holding an application in the office for years, forestalling all others by warning them that a patent is pending and in the interim manufacturing and establishing their article in the market.

The growth of the office activities during the period from 1871 to 1890 was enormous. This was the age of new industries stimulated by the discoveries and inventions of the use of electricity. It is not the age of the individual inventor. He was at work of course, but at work more and more generally in the shop of the capitalist. Here, in an era of new industries as well as in the case of competition, the patent grant has been an incentive. To gain control of something absolutely new has advantages which equal reduction of production cost or increase of gain in sale. But the murmur against monopolistic tendencies which our patent system affords has become louder with recent times, and the cases which are now coming before the Supreme Court for decision lend to the charge no little support.

The abuse of interferences by those financially able to drag out the case, appeal after appeal, has wrested inventions from rightful owners on more than one occasion, and the problem how to protect the individual against this abuse has not been as yet easy of solution.

By the act of June 10, 1898, provision was made for an increase of the examining force in the Patent Office for the purpose of revising and perfecting classification by subject matter of all letters patent and printed publications in the office which con-

stitute the field of search in the examination as to the novelty of invention. The work of this Classification Division has proceeded slowly and is not yet completed.

In 1908 the examining force was increased in numbers, and an increase was made in the salaries paid in each grade in the office. This proved a benefit to the office, but in recent annual reports the Commissioner of Patents has urged further increases in compensation in order that there may be retained in the office the services of examiners who would otherwise resign. He has also urged the abolition of one appeal in the office, the establishment of a court of patent appeals, and an appropriation for a new building in order to provide suitable accommodations for the transaction of the patent business.

On August 21, 1912, Congress passed a joint resolution requesting the President to have the Commission on Economy and Efficiency investigate and report to Congress not later than December 10, 1912, what changes in law, what increases in appropriations, and what additional building accommodations may be necessary to enable the Patent Office to discharge its functions in a thoroughly efficient and economical manner. The result of that investigation is embodied in the report to which this paper is an appendix.

APPENDIX B.

UNITED STATES LAWS AND RULES OF PRACTICE RELATING TO PATENTS, TRADE-MARKS, AND PRINTS AND LABELS.

I. PATENT LAWS.

II. RULES OF PRACTICE IN THE PATENT OFFICE.

III. TRADE-MARK LAWS.

IV. RULES GOVERNING THE REGISTRATION OF TRADE-MARKS UNDER THE TRADE-MARK ACTS.

V. PRINTS AND LABELS LAWS.

VI. RULES GOVERNING THE REGISTRATION OF PRINTS AND LABELS IN THE PATENT OFFICE.

UNITED STATES LAWS AND RULES OF PRACTICE RELATING TO PATENTS, TRADE-MARKS, AND PRINTS AND LABELS.

I. Patent Laws.

(*The constitutional provision.*—The Congress shall have power * * * to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.)

ORGANIZATION OF THE PATENT OFFICE.

[Revised Statutes.]

Sec. 475. There shall be in the Department of the Interior an office known as the Patent Office, where all records, books, models, drawings, specifications, and other papers and things pertaining to patents shall be safely kept and preserved.

Sec. 476. There shall be in the Patent Office a Commissioner of Patents, one assistant commissioner, and three examiners in chief, who shall be appointed by the President, by and with the advice and consent of the Senate. All other officers, clerks, and employees authorized by law for the office shall be appointed by the Secretary of the Interior, upon the nomination of the Commissioner of Patents. (See Sec. 169.)

Sec. 441. The Secretary of the Interior is charged with the supervision of public business relating to the following subjects:

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Fifth. Patents for inventions.

Sec. 478. The seal heretofore provided for the Patent Office shall be the seal of the office, with which letters patent and papers issued from the office shall be authenticated.

Sec. 479. The Commissioner of Patents and the chief clerk, before entering upon their duties, shall severally give bond, with sureties, to the Treasurer of the United States, the former in the sum of ten thousand dollars and the latter in the sum of five thousand dollars, conditioned for the faithful discharge of their respective duties, and that they shall render to the proper officers of the Treasurer a true account of all money received by virtue of their offices.

Sec. 480. All officers and employes of the Patent Office shall be incapable, during the period for which they hold their appointments, to acquire or take, directly or indirectly, except by inheritance or bequest, any right or interest in any patent issued by the office.

Sec. 481. The Commissioner of Patents, under the direction of the Secretary of the Interior, shall superintend or perform all duties respecting the granting and issuing of patents directed by law; and he shall have charge of all books, records, papers, models, machines, and other things belonging to the Patent Office.

Sec. 482. The examiners in chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine upon the validity of the adverse decisions of examiners upon applications for patents, and for reissues of patents, and in interference cases; and when required by the commissioner, they shall hear and report upon claims for extensions, and perform such other like duties as he may assign them.

Sec. 483. The Commissioner of Patents, subject to the approval of the Secretary of the Interior, may from time to time establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

SEC. 484. The Commissioner of Patents shall cause to be classified and arranged in suitable cases, in the rooms and galleries provided for that purpose, the models, specimens of composition, fabrics, manufactures, works of art, and designs, which have been or shall be deposited in the Patent Office; and the rooms and galleries shall be kept open during suitable hours for public inspection.

SEC. 485. The Commissioner of Patents may restore to the respective applicants such of the models belonging to rejected applications as he shall not think necessary to be preserved, or he may sell or otherwise dispose of them after the application has been finally rejected for one year, paying the proceeds into the Treasury, as other patent moneys are directed to be paid.

SEC. 486. There shall be purchased for the use of the Patent Office a library of such scientific works and periodicals, both foreign and American, as may aid the officers in the discharge of their duties, not exceeding the amount annually appropriated for that purpose.

SEC. 487. For gross misconduct the Commissioner of Patents may refuse to recognize any person as a patent agent, either generally or in any particular case; but the reasons for such refusal shall be duly recorded, and be subject to the approval of the Secretary of the Interior.

SEC. 488. The Commissioner of Patents may require all papers filed in the Patent Office, if not correctly, legibly, and clearly written, to be printed at the cost of the party filing them.

SEC. 489. The Commissioner of Patents may print, or cause to be printed, copies of the claims of current issues, and copies of such laws, decisions, regulations, and circulars as may be necessary for the information of the public.

SEC. 490. The Commissioner of Patents is authorized to have printed, from time to time, for gratuitous distribution, not to extend one hundred and fifty copies of the complete specifications and drawings of each patent hereafter issued, together with suitable indexes, one copy to be placed for free public inspection in each capitol of every State and Territory, one for the like purpose in the clerk's office of the district court of each judicial district of the United States, except when such offices are located in State or Territorial capitols, and one in the Library of Congress, which copies shall be certified under the hand of the commissioner and seal of the Patent Office, and shall not be taken from the depositories for any other purpose than to be used as evidence. (See Sec. 894.)

SEC. 491. The Commissioner of Patents is authorized to have printed such additional numbers of copies of specifications and drawings, certified as provided in the preceding section, at a price not to exceed the contract price for such drawings, for sale, as may be warranted by the actual demand for the same; and he is also authorized to furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office and for the transportation of the same, and which shall also provide for proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable.

SEC. 492. The lithographing and engraving required by the two preceding sections shall be awarded to the lowest and best bidders for the interests of the Government, due regard being paid to the execution of the work, after due advertising by the Congressional Printer under the direction of the Joint Committee on Printing; but the Joint Committee on Printing may empower the Congressional Printer to make immediate contracts for engraving whenever, in their opinion, the exigencies of the public service will not justify waiting for advertisement and award; or if, in the judgment of the Joint Committee on Printing, the work can be performed under the direction of the Commissioner of Patents more advantageously than in the manner above prescribed, it shall be so done, under such limitations and conditions as the Joint Committee on Printing may from time to time prescribe.

[Act of Mar. 3, 1875 (18 Stat., 402).]

SEC. 12. That it shall be the duty of the Commissioner of Patents to furnish, free of cost, one copy of the bound volumes of specifications and drawings of patents published by the Patent Office to each of the executive departments of the Government, upon the request of the head thereof.

[Act of Jan. 12, 1895 (28 Stat., 619).]

The Commissioner of Patents, upon the requisition of the Secretary of the Interior, is authorized to continue the printing of the following:

First. The patents for inventions and designs issued by the Patent Office, including grants, specifications, and drawings, together with copies of the same, and of patents already issued, in such number as may be needed for the business of the office.

Second. The certificates of trade-marks and labels registered in the Patent Office, including descriptions and drawings, together with copies of the same, and of trade-marks and labels heretofore registered, in such numbers as may be needed for the business of the office.

Third. The Official Gazette of the United States Patent Office in numbers sufficient to supply all who shall subscribe therefor at five dollars per annum; also to exchange for other scientific publications desirable for the use of the Patent Office; also to supply one copy to each Senator, Representatives, and Delegate in Congress; also to supply one copy to eight such public libraries having over one thousand volumes, exclusive of Government publications, as shall be designated by each Senator, Representative, and Delegate in Congress, with one hundred additional copies, together with bimonthly and annual indexes for all the same; of the Official Gazette the "usual number" shall not be printed.

Fourth. The report of the Commissioner of Patents for the fiscal year, not exceeding five hundred in number, for distribution by him; the Annual Report of the Commissioner of Patents to Congress, without the list of patents, not exceeding one thousand five hundred in number, for distribution by him; and of the Annual Report of the Commissioner of Patents to Congress, with the list of patents, five hundred copies for sale by him, if needed, and in addition thereto the "usual number" only shall be printed.

Fifth. (This paragraph, which provided for monthly volumes of specifications and drawings of each patent issued for file in the clerks' offices of United States District Courts, etc., was repealed by a clause in the sundry civil appropriation act of Aug. 24, 1912.)

Sixth. Pamphlet copies of the rules of practice, pamphlet copies of the patent laws, and pamphlet copies of the laws and rules relating to trade-marks and labels, and circulars relating to the business of the office, all in such numbers as may be needed for the business of the office. The "usual number" shall not be printed.

Seventh. Annual volumes of the decisions of the Commissioner of Patents and of the United States courts in patent cases, not exceeding one thousand five hundred in number, of which the "usual number" shall be printed, and for this purpose a copy of each shall be transmitted to Congress promptly when prepared.

Eighth. Indexes to patents relating to electricity, and indexes to foreign patents, in such numbers as may be needed for the business of office. The "usual number" shall not be printed.

All printing for the Patent Office making use of lithography or photolithography, together with the plates for the same, shall be contracted for and performed under the direction of the Commissioner of Patents, under such limitations and conditions as the Joint Committee on Printing may from time to time prescribe, and all other printing for the Patent Office shall be done by the Public Printer under such limitations and conditions as the Joint Committee on Printing may from time to time prescribe: *Provided*, That the entire work may be done at the Government Printing Office whenever in the judgment of the Joint Committee on Printing the same would be to the interest of the Government.

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[Revised Statutes.]

SEC. 493. The price to be paid for uncertified printed copies of specifications and drawings of patents shall be determined by the Commissioner of Patents: *Provided*, That the maximum cost of a copy shall be ten cents. [As amended by acts of Mar. 24, 1871, 17 Stat., 3, and May 19, 1896, 29 Stat., 124.]

SEC. 494. The Commissioner of Patents shall lay before Congress, in the month of January, annually, a report, giving a detailed statement of all moneys received for patents, for copies of records or drawings, or from any other source whatever; a detailed statement of all expenditures for contingent and miscellaneous expenses; a list of all patents which were granted during the preceding year; designating under proper heads the subjects of such patents; an alphabetical list of all the patentees, with their places of residence; a list of all patents which have been extended during the year; and such other information of the condition of the Patent Office as may be useful to Congress or the public. (See secs. 195, 196.)

SEC. 496. All disbursements for the Patent Office shall be made by the disbursing clerk of the Interior Department.

[Act of Mar. 3, 1897 (29 Stat., 694).]

SEC. 7. That in every case where the head of any department of the Government shall request the Commissioner of Patents to expedite the consideration of an application for a patent, it shall be the duty of such head of a department to be represented before the commissioner in order to prevent the improper issue of a patent.

COURTS.

[Revised Statutes.]

SEC. 629. The circuit courts shall have original jurisdiction as follows:

* * * * * * *

Ninth. Of all suits at law or in equity arising under the patent or copyright laws of the United States.

[Act of Mar. 3, 1897 (29 Stat., 695).]

That in suits brought for the infringement of letters patent the circuit courts[1] of the United States shall have jurisdiction, in law or in equity, in the district of which the defendant is an inhabitant, or in any district in which the defendant, whether a person, partnership, or corporation, shall have committed acts of infringement and have a regular and established place of business. If such suit is brought in a district of which the defendant is not an inhabitant, but in which such defendant has a regular and established place of business, service of process, summons, or subpœna upon the defendant may be made by service upon the agent or agents engaged in conducting such business in the district in which suit is brought.

[Revised Statutes.]

SEC. 690. The Supreme Court shall have appellate jurisdiction in the cases hereinafter specially provided for.

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SEC. 699. A writ of error may be allowed to review any final judgment at law, and an appeal shall be allowed from any final decree in equity hereinafter mentioned, without regard to the sum or value in dispute:

First. Any final judgment at law or final decree in equity of any circuit court,[1] or of any district court acting as a circuit court, or of the Supreme Court of the District of Columbia, or of any Territory, in any case touching patent rights or copyrights.

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[1] Circuit courts were abolished by act of Mar. 3, 1911 (36 Stat., 1167), effective Jan. 1, 1912, and their duties conferred upon United States district courts.

SEC. 711. The jurisdiction vested in the courts of the United States in the cases and proceedings hereinafter mentioned, shall be exclusive of the courts of the several States:

* * * * * * *

Fifth. Of all cases arising under the patent-right or copyright laws of the United States.

[Act of Mar. 3, 1887 (29 Stat., 694).]

SEC. 8. That this act shall take effect January first, eighteen hundred and ninety-eight, and sections one, two, three, and four, amending sections forty-eight hundred and eighty-six, forty-nine hundred and twenty, forty-eight hundred and eighty-seven, and forty-eight hundred and ninety-four of the Revised Statutes, shall not apply to any patent granted prior to said date, nor to any application filed prior to said date, nor to any patent granted on such an application.

[Act of Mar. 3, 1891 (26 Stat., 826).]

SEC. 2. That there is hereby created in each circuit a circuit court of appeals, which shall consist of three judges, of whom two shall constitute a quorum, and which shall be a court of record with appellate jurisdiction, as is hereafter limited and established.

SEC. 4. That no appeal, whether by writ of error or otherwise, shall hereafter be taken or allowed from any district court to the existing circuit courts, and no appellate jurisdiction shall hereafter be exercised or allowed by said existing circuit courts, but all appeals by writ of error or otherwise, from said district courts, shall only be subject to review in the Supreme Court of the United States or in the circuit court of appeals hereby established, as is hereinafter provided, and the review, by appeal, by writ of error, or otherwise, from the existing circuit courts, shall be had only in the Supreme Court of the United States or in the circuit courts of appeals hereby established according to the provisions of this act regulating the same.

[Act of Feb. 19, 1897 (29 Stat., 536).]

That the second section of an act to establish circuit courts of appeals, passed March third, eighteen hundred and ninety-one, be amended so that the clause therein which now reads, "The costs and fees in the Supreme Court now provided for by law shall be costs and fees in the circuit courts of appeals," shall read, "The costs and fees in each circuit court of appeals shall be fixed and established by said court in a table of fees, to be adopted within three months after the passage of this act: *Provided*, That the costs and fees so fixed by any court of appeals shall not, with respect to any item, exceed the costs and fees now charged in the Supreme Court." Each circuit court of appeals shall, within three months after the fixing and establishing of costs and fees as aforesaid, transmit said table to the Chief Justice of the United States, and within one year thereof the Supreme Court of the United States shall revise said table, making the same, so far as may seem just and reasonable, uniform throughout the United States. The table of fees, when so revised, shall thereupon be in force for each circuit.

[Act of Mar. 3, 1891 (26 Stat., 828).]

SEC. 6. That the circuit courts of appeals established by this act shall exercise appellate jurisdiction to review by appeal or by writ of error final decision in the district court and the existing circuit courts[1] in all cases other than those provided for in the preceding section of this act, unless otherwise provided by law, and the judgments or decrees of the circuit courts of appeals shall be final in all cases in which the jurisdiction is dependent entirely upon the opposite parties to the suit or controversy, being aliens and citizens of the United States or citizens of different States;

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[1] Circuit courts were abolished by act of Mar. 3, 1911 (36 Stat., 1167), effective Jan. 1, 1912, and their duties conferred upon United States district courts.

also in all cases arising under the patent laws, under the revenue laws, and under the criminal laws and in admiralty cases, excepting that in every such subject within its appellate jurisdiction the circuit court of appeals at any time may certify to the Supreme Court of the United States any questions or propositions of law concerning which it desires the instruction of that court for its proper decision. And thereupon the Supreme Court may either give its instruction on the questions and propositions certified to it, which shall be binding upon the circuit courts of appeals in such case, or it may require that the whole record and cause may be sent up to it for its consideration, and thereupon shall decide the whole matter in controversy in the same manner as if it had been brought there for review by writ of error or appeal.

And excepting that in any such case as is hereinbefore made final in the circuit court of appeals it shall be competent for the Supreme Court to require, by certiorari or otherwise, any such case to be certified to the Supreme Court for its review and determination with the same power and authority in the case as if it had been carried by appeal or writ of error to the Supreme Court.

In all cases not hereinbefore, in this section, made final there shall be of right an appeal or writ of error or review of the case by the Supreme Court of the United States where the matter in controversy shall exceed one thousand dollars besides costs. But no such appeal shall be taken or writ of error sued out unless within one year after the entry of the order, judgment, or decree sought to be reviewed.

[Revised Statutes.]

SEC. 892. Written or printed copies of any records, books, papers, or drawings belonging to the Patent Office, and of letters patent authenticated by the seal and certified by the commissioner or acting commissioner thereof, shall be evidence in all cases wherein the originals could be evidence; and any person making application therefor, and paying the fee required by law, shall have certified copies thereof.

SEC. 893. Copies of the specifications and drawings of foreign letters patent certified as provided in the preceding section shall be prima facie evidence of the fact of the granting of such letters patent, and of the date and contents thereof.

SEC. 894. The printed copies of specifications and drawings of patents, which the Commissioner of Patents is authorized to print for gratuitous distribution and to deposit in the capitols of the States and Territories and in the clerks' offices of the district courts, shall, when certified by him and authenticated by the seal of his office, be received in all courts as evidence of all matters therein contained. (See sec. 490.)

SEC. 973. When judgment or decree is rendered for the plaintiff or complainant in any suit at law or in equity for the infringement of a part of a patent in which it appears that the patentee, in his specification, claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented of which he was not the original and first inventor, no costs shall be recovered unless the proper disclaimer, as provided by the patent laws, has been entered at the Patent Office before the suit was brought. (See secs. 4917, 4922.)

SEC. 1537. No patented article connected with marine engines shall hereafter be purchased or used in connection with any steam vessels of war until the same shall have been submitted to a competent board of naval engineers and recommended by such board, in writing, for purchase and use.

SEC. 1672. The breech-loading system for muskets and carbines adopted by the Secretary of War, known as the "Springfield breech-loading system," is the only system to be used by the Ordnance Department in the manufacture of muskets and carbines for the military service.

SEC. 1673. No royalty shall be paid by the United States to any one of its officers or employes for the use of any patent for the system, or any part thereof, mentioned in the preceding section, nor for such patent in which said officers or employes may be directly or indirectly interested.

PATENTS.

[Revised Statutes.]

SEC. 4883. All patents shall be issued in the name of the United States of America, under the seal of the Patent Office, and shall be signed by the Commissioner of Patents, and they shall be recorded, together with the specifications, in the Patent Office in books to be kept for that purpose. [As amended by acts of Feb. 18, 1888, 25 Stat., 40; and Apr. 11, 1902, 32 Stat., 94.]

[Act of Apr. 19, 1888 (25 Stat., 87).]

All patents for inventions signed by David L. Hawkins, Second Assistant Secretary of the Interior, or any other Assistant Secretary of the Interior, shall have the same force, effect, and validity as though the same had been signed by the Secretary of the Interior in person at the date on which they were respectively executed.

[Revised Statutes.]

SEC. 4884. Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs, or assigns, for the term of seventeen years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof.

SEC. 4885. Every patent shall issue within a period of three months from the date of the payment of the final fee, which fee shall be paid not later than six months from the time at which the application was passed and allowed and notice thereof was sent to the applicant or his agent; and if the final fee is not paid within that period the patent shall be withheld. [As amended by act of May 23, 1908, 35 Stat., 246.]

SEC. 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor. [As amended by act of Mar. 3, 1897, 29 Stat., 692.]

[Act of Mar. 3, 1883 (22 Stat., 625).]

The Secretary of the Interior and the Commissioner of Patents are authorized to grant any officer of the Government, except officers and employes of the Patent Office, a patent for any invention of the classes mentioned in section forty-eight hundred and eighty-six of the Revised Statutes when such invention is used or to be used in the public service, without the payment of any fee: *Provided*, That the applicant in his application shall state that the invention described therein, if patented, may be used by the Government, or any of its officers or employees, in prosecution of work for the Government, or by any other person in the United States, without the payment to him of any royalty thereon, which stipulation shall be included in the patent.

[Revised Statutes.]

SEC. 4887. No person otherwise entitled thereto shall be debarred from receiving a patent for his invention or discovery, nor shall any patent be declared invalid by reason of its having been first patented or caused to be patented by the inventor or his legal representatives or assigns in a foreign country, unless the application for said foreign patent was filed more than twelve months, in cases within the provisions of

section forty-eight hundred and eighty-six of the Revised Statutes, and four months in cases of designs, prior to the filing of the application in this country, in which case no patent shall be granted in this country.

An application for patent for an invention or discovery or for a design filed in this country by any person who has previously regularly filed an application for a patent for the same invention, discovery, or design in a foreign country which, by treaty, convention, or law affords similar privileges to citizens of the United States, shall have the same force and effect as the same application would have if filed in this country on the date on which the application for patent for the same invention, discovery, or design was first filed in such foreign country, provided the application in this country is filed within twelve months in cases within the provisions of section forty-eight hundred and eighty-six of the Revised Statutes, and within four months in cases of designs, from the earliest date on which any such foreign application was filed. But no patent shall be granted on an application for patent for an invention or discovery or a design which had been patented or described in a printed publication in this or any foreign country more than two years before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country for more than two years prior to such filing. [As amended by act of Mar. 3, 1897, 29 Stat., 693; and act of Mar. 3, 1903, 32 Stat., 1226.]

SEC. 4888. Before any inventor or discoverer shall receive a patent for his invention or discovery he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. The specification and claim shall be signed by the inventor and attested by two witnesses.

SEC. 4889. When the nature of the case admits of drawings, the applicant shall furnish one copy signed by the inventor or his attorney in fact and attested by two witnesses, which shall be filed in the Patent Office; and a copy of the drawing, to be furnished by the Patent Office, shall be attached to the patent as a part of the specification.

SEC. 4890. When the invention or discovery is of a composition of matter, the applicant, if required by the commissioner, shall furnish specimens of ingredients and of the composition sufficient in quantity for the purposes of experiment.

SEC. 4891. In all cases which admit of representation by model, the applicant, if required by the commissioner, shall furnish a model of convenient size to exhibit advantageously the several parts of his invention or discovery.

SEC. 4892. The applicant shall make oath that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent; that he does not know and does not believe that the same was ever before known or used; and shall state of what country he is a citizen. Such oath may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States, or before any notary public, judge, or magistrate having an official seal and authorized to administer oaths in the foreign country in which the applicant may be, whose authority shall be proved by certificate of a diplomatic or consular officer of the United States. [As amended by act of Mar. 3, 1903, 32 Stat., 1226.]

SEC. 4893. On the filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall cause an examination to be made of the alleged new invention or discovery; and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the commissioner shall issue a patent therefor.

SEC. 4894. All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable. [As amended by act of Mar. 3, 1897, 29 Stat., 693.]

SEC. 4895. Patents may be granted and issued or reissued to the assignee of the inventor or discoverer; but the assignment must first be entered of record in the Patent Office. And in all cases of an application by an assignee for the issue of a patent, the application shall be made and the specification sworn to by the inventor or discoverer; and in all cases of an application for a reissue of any patent, the application must be made and the corrected specification signed by the inventor or discoverer, if he is living, unless the patent was issued and the assignment made before the eighth day of July, eighteen hundred and seventy.

SEC. 4896. When any person, having made any new invention or discovery for which a patent might have been granted, dies before a patent is granted, the right of applying for and obtaining the patent shall devolve on his executor or administrator, in trust for the heirs at law of the deceased, in case he shall have died intestate; or if he shall have left a will disposing of the same, then in trust for his devisees, in as full manner and on the same terms and conditions as the same might have been claimed or enjoyed by him in his lifetime, and when any person having made any new invention or discovery for which a patent might have been granted becomes insane before a patent is granted the right of applying for and obtaining the patent shall devolve on his legally appointed guardian, conservator, or representative in trust for his estate in as full manner and on the same terms and conditions as the same might have been claimed or enjoyed by him while sane; and when the application is made by such legal representatives the oath or affirmation required to be made shall be so varied in form that it can be made by them. The executor or administrator duly authorized under the law of any foreign country to administer upon the estate of the deceased inventor shall, in case the said inventor was not domiciled in the United States at the time of his death, have the right to apply for and obtain the patent. The authority of such foreign executor or administrator shall be proved by certificate of a diplomatic or consular officer of the United States.

The foregoing section, as to insane persons, is to cover all applications now on file in the Patent Office or which may be hereafter made. [As amended by act of Mar. 3, 1903, 32 Stat., 1227; and by act of May 23, 1908, 35 Stat., 245.]

SEC. 4897. Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it was passed and allowed, and notice thereof was sent to the applicant or his agent, shall have a right to make an application for a patent for such invention or discovery the same as in the case of an original application. But such second application must be made within two years after the allowance of the original application. But no person shall be held responsible in damages for the manufacture or use of any article or thing for which a patent was ordered to issue under such renewed application prior to the issue of the patent. And upon the hearing of renewed applications preferred under this section, abandonment shall be considered as a question of fact.

SEC. 4898. Every patent or any interest therein shall be assignable in law by an instrument in writing, and the patentee or his assigns or legal representatives may in like manner grant and convey an exclusive right under his patent to the whole or any specified part of the United States. An assignment, grant, or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from the date thereof.

If any such assignment, grant, or conveyance of any patent shall be acknowledged before any notary public of the several States or Territories or the District of Columbia, or any commissioner of the United States circuit court, or before any secretary of legation or consular officer authorized to administer oaths or perform notarial acts under section seventeen hundred and fifty of the Revised Statutes, the certificate of such acknowledgment under the hand and official seal of such notary or other officer shall be prima facie evidence of the execution of such assignment, grant, or conveyance. [As amended by act of Mar. 3, 1897, 29 Stat., 693.]

SEC. 4899. Every person who purchases of the inventor or discoverer, or, with his knowledge and consent, constructs any newly invented or discovered machine, or other patentable article, prior to the application by the inventor or discoverer for a patent, or who sells or uses one so constructed, shall have the right to use, and vend to others to be used, the specific thing so made or purchased, without liability therefor.

SEC. 4900. It shall be the duty of all patentees, and their assigns and legal representatives, and of all persons making or vending any patented article for or under them, to give sufficient notice to the public that the same is patented; either by fixing thereon the word "patented," together with the day and year the patent was granted; or when, from the character of the article, this can not be done, by fixing to it, or to the package wherein one or more of them is inclosed, a label containing the like notice; and in any suit for infringement by the party failing so to mark, no damages shall be recovered by the plaintiff, except on proof that the defendant was duly notified of the infringement, and continued, after such notice, to make, use, or vend the article so patented.

SEC. 4901. Every person who, in any manner, marks upon anything made, used, or sold by him for which he has not obtained a patent, the name or any imitation of the name of any person who has obtained a patent therefor, without the consent of such patentee, or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any such patented article the word "patent" or "patentee," or the words "letters patent," or any word of like import, with intent to imitate or counterfeit the mark or device of the patentee, without having the license or consent of such patentee or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any unpatented article the word "patent" or any word importing that the same is patented, for the purpose of deceiving the public, shall be liable, for every such offense, to a penalty of not less than one hundred dollars, with costs; one-half of said penalty to the person who shall sue for the same, and the other to the use of the United States, to be recovered by suit in any district court of the United States within whose jurisdiction such offense may have been committed.

SEC. 4902. (This section, which provided for the filing of a caveat, was repealed by act of June 25, 1910, 36 Stat., 843.)

SEC. 4903. Whenever, on examination, any claim for a patent is rejected, the commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejection, together with such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for a patent, with or without altering his specifications, the commissioner shall order a reexamination of the case.

SEC. 4904. Whenever an application is made for a patent which, in the opinion of the commissioner, would interfere with any pending application, or with any unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the board of examiners in chief, as the case may be, within such time, not less than twenty days, as the commissioner shall prescribe.

SEC. 4905. The Commissioner of Patents may establish rules for taking affidavits and depositions required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any officer authorized by law to take depositions to be used in the courts of the United States or of the State where the officer resides.

SEC. 4906. The clerk of any court of the United States for any district or territory wherein testimony is to be taken for use in any contested case pending in the Patent Office shall, upon the application of any party thereto, or of his agent or attorney, issue a subpœna for any witness residing or being within such district or territory, commanding him to appear and testify before any officer in such district or territory authorized to take depositions and affidavits, at any time and place in the subpœna stated. But no witness shall be required to attend at any place more than forty miles from the place where the subpœna is served upon him.

SEC. 4907. Every witness duly subpœnaed and in attendance shall be allowed the same fees as are allowed to witnesses attending the courts of the United States.

SEC. 4908. Whenever any witness, after being duly served with such subpœna, neglects or refuses to appear, or after appearing refuses to testify, the judge of the court whose clerk issued the subpœna may, on proof of such neglect or refusal, enforce obedience to the process, or punish the disobedience, as in other like cases. But no witness shall be deemed guilty of contempt for disobeying such subpœna, unless his fees and traveling expenses in going to, returning from, and one day's attendance at the place of examination, are paid or tendered him at the time of the service of the subpœna; nor for refusing to disclose any secret invention or discovery made or owned by himself.

SEC. 4909. Every applicant for a patent or for the reissue of a patent, any of the claims of which have been twice rejected, and every party to an interference, may appeal from the decision of the primary examiner, or of the examiner in charge of interferences in such case, to the board of examiners in chief, having once paid the fee for such appeal.

SEC. 4910. If such party is dissatisfied with the decision of the examiners in chief, he may, on payment of the fee prescribed, appeal to the commissioner in person.

SEC. 4911. If such party, except a party to an interference, is dissatisfied with the decision of the commissioner, he may appeal to the Supreme Court of the District of Columbia, sitting in banc. (See sec. 9 act of Feb. 9, 1893, below.)

SEC. 4912. When an appeal is taken to the Supreme Court of the District of Columbia the appellant shall give notice thereof to the commissioner, and file in the Patent Office within such time as the commissioner shall appoint, his reasons of appeal, specifically set forth in writing.

SEC. 4913. The court shall, before hearing such appeal, give notice to the commissioner of the time and place of the hearing, and on receiving such notice the commissioner shall give notice of such time and place in such manner as the court may prescribe, to all parties who appear to be interested therein. The party appealing shall lay before the court certified copies of all the original papers and evidence in the case, and the commissioner shall furnish the court with the grounds of his decision, fully set forth in writing, touching all the points involved by the reasons of appeal. And at the request of any party interested, or of the court, the commissioner and the

SEC. 4920. In any action for infringement the defendant may plead the general issue, and, having given notice in writing to the plaintiff or his attorney thirty days before, may prove on trial any one or more of the following special matters:

First. That for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery or more than is necessary to produce the desired effect; or,

Second. That he had surreptitiously or unjustly obtained the patent for that which was in fact invented by another, who was using reasonable diligence in adapting and perfecting the same; or,

Third. That it has been patented or described in some printed publication prior to his supposed invention or discovery thereof or more than two years prior to his application for a patent therefor; or,

Fourth. That he was not the original and first inventor or discoverer of any material and substantial part of the thing patented; or,

Fifth. That it had been in public use or on sale in this country for more than two years before his application for a patent or had been abandoned to the public.

And in notices as to proof of previous invention, knowledge, or use of the thing patented the defendant shall state the names of the patentees and the dates of their patents, and when granted, and the names and residences of the persons alleged to have invented or to have had the prior knowledge of the thing patented, and where and by whom it had been used; and if any one or more of the special matters alleged shall be found for the defendant, judgment shall be rendered for him with costs. And the like defenses may be pleaded in any suit in equity for relief against an alleged infringement, and proofs of the same may be given upon like notice in the answer of the defendant and with the like effect. [As amended by act of Mar. 3, 1897, 29 Stat., 692.]

SEC. 4921. The several courts vested with jurisdiction of cases arising under the patent laws shall have power to grant injunctions according to the course and principles of courts of equity to prevent the violation of any right secured by patent on such terms as the court may deem reasonable, and upon a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction. And the court shall have the same power to increase such damages, in its discretion, as is given to increase the damages found by verdicts in actions in the nature of actions of trespass upon the case.

But in any suit or action brought for the infringement of any patent there shall be no recovery of profits or damages for any infringement committed more than six years before the filing of the bill of complaint or the issuing of the writ in such suit or action, and this provision shall apply to existing causes of action. [As amended by act of Mar. 3, 1897, 29 Stat., 694.]

[Act of Feb. 16, 1875 (18 Stat., 316).]

SEC. 2. That said courts [U. S. circuit courts], when sitting in equity for the trial of patent causes, may impanel a jury of not less than five and not more than twelve persons, subject to such general rules in the premises as may, from time to time, be made by the Supreme Court, and submit to them such questions of fact arising in such cause as such circuit court shall deem expedient, and the verdict of such jury shall be treated and proceeded upon in the same manner and with the same effect as in the case of issues sent from chancery to a court of law and returned with such findings.

[Revised Statutes.]

SEC. 4922. Whenever, through inadvertence, accident, or mistake, and without any willful default or intent to defraud or mislead the public, a patentee has in his speci-

fication claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented of which he was not the original and first inventor or discoverer, every such patentee, his executors, administrators, and assigns, whether of the whole or any sectional interest in the patent, may maintain a suit at law or in equity for the infringement of any part thereof, which was bona fide his own, if it is a material and substantial part of the thing patented and definitely distinguishable from the parts claimed without right, notwithstanding the specifications may embrace more than that of which the patentee was the first inventor or discoverer. But in every such case in which a judgment or decree shall be rendered for the plaintiff no costs shall be recovered unless the proper disclaimer has been entered at the Patent Office before the commencement of the suit. But no patentee shall be entitled to the benefits of this section if he has unreasonably neglected or delayed to enter a disclaimer. (See secs. 973, 4917.)

SEC. 4923. Whenever it appears that a patentee, at the time of making his application for the patent, believed himself to be the original and first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been known or used in a foreign country before his invention or discovery thereof, if it had not been patented or described in a printed publication.

[Act of June 10, 1898 (30 Stat., 440).]

That for the purpose of determining with more readiness and accuracy the novelty of inventions for which applications for letters patent are or may be filed in the United States Patent Office, and to prevent the issuance of letters patent of the United States for inventions which are not new, the Commissioner of Patents is hereby authorized and directed to revise and perfect the classification, by subjects-matter, of all letters patent and printed publications in the United States Patent Office which constitute the field of search in the examination as to the novelty of invention for which applications for patents are or may be filed.

SEC. 2. That for the purpose of enabling the Commissioner of Patents to carry out the provisions of this act the Secretary of the Interior is hereby authorized to appoint, from time to time, in the manner already provided for by law, such additional number of principal examiners, assistant examiners, first-class clerks, copyists, laborers, assistant messengers, and messenger boys as he may deem necessary: *Provided, however*, That the whole number of additional employees shall not exceed three principal examiners, two first assistant examiners, two second assistant examiners, six third assistant examiners, five fourth assistant examiners, four first-class clerks, four copyists, six laborers, six assistant messengers, and six messenger boys; that the annual expenses for this additional force shall not exceed the sum of sixty-two thousand eight hundred and eighty dollars.

DESIGNS.

[Revised Statutes.]

SEC. 4929. Any person who has invented any new, original, and ornamental design for an article of manufacture not known or used by others in this country before his invention thereof, and not patented or described in any printed publication in this or any foreign country before his invention thereof, or more than two years prior to his application, and not in public use or sale on in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law and other due proceedings had, the same as in cases of invention or discoveries covered by section forty-eight hundred and eighty-six obtain a patent therefor. [As amended by act of May 9, 1902, 32 Stat., 193.]

SEC. 4930. The commissioner may dispense with models of designs when the design can be sufficiently represented by drawings or photographs.

SEC. 4931. Patents for designs may be granted for the term of three years and six months, or for seven years, or for fourteen years, as the applicant may, in his application, elect.

SEC. 4932. Patentees of designs issued prior to the second day of March, eighteen hundred and sixty-one, shall be entitled to extension of their respective patents for the term of seven years, in the same manner and under the same restrictions as are provided for the extension of patents for inventions or discoveries issued prior to the second day of March, eighteen hundred and sixty-one.

SEC. 4933. All the regulations and provisions which apply to obtaining or protecting patents for inventions or discoveries not inconsistent with the provisions of this title shall apply to patents for designs.

[Act of Feb. 4, 1887 (24 Stat., 387).]

That hereafter, during the term of letters patent for a design, it shall be unlawful for any person other than the owner of said letters patent, without the license of such owner, to apply the design secured by such letters patent, or any colorable imitation thereof, to any article of manufacture for the purpose of sale or to sell or expose for sale any article of manufacture to which such design or colorable imitation shall, without the license of the owner, have been applied, knowing that the same has been so applied. Any person violating the provisions, or either of them, of this section shall be liable in the amount of two hundred and fifty dollars, and in case the total profit made by him from the manufacture or sale, as aforesaid, of the article or articles to which the design or colorable imitation thereof has been applied exceeds the sum of two hundred and fifty dollars he shall be further liable for the excess of such profit over and above the sum of two hundred and fifty dollars, and the full amount of such liability may be recovered by the owner of the letters patent to his own use in any circuit court of the United States having jurisdiction of the parties, either by action at law or upon a bill in equity for an injunction to restrain such infringement.

SEC. 2. That nothing in this act contained shall prevent, lessen, impeach, or avoid any remedy at law or in equity which any owner of letters patent for a design, aggrieved by the infringement of the same, might have had if this act had not been passed, but such owner shall not twice recover the profit made from the infringement.

FEES.

[Revised Statutes.]

SEC. 4934. The following shall be the rates for patent fees:

On filing each original application for a patent, except in design cases, fifteen dollars.

On issuing each original patent, except in design cases, twenty dollars.

In design cases: For three years and six months, ten dollars; for seven years, fifteen dollars; for fourteen years, thirty dollars.

On every application for the reissue of a patent, thirty dollars.

On filing each disclaimer, ten dollars.

* * * * * * *

On an appeal for the first time from the primary examiners to the examiners in chief, ten dollars.

On every appeal from the examiners in chief to the commissioner, twenty dollars.

For certified copies of patents and other papers, including certified printed copies, ten cents per hundred words.

For recording every assignment, power of attorney, or other paper, of three hundred words or under, one dollar; of over three hundred and under one thousand words, two dollars; and for each additional thousand words or fraction thereof, one dollar.

For copies of drawings, the reasonable cost of making them. [As amended by act of May 27, 1908, 35 Stat., 343.]

[Act of Mar. 3, 1891 (26 Stat., 940).]

Certified copies of such drawings and specifications may be furnished by the Commissioner of Patents to persons applying therefor upon payment of the present rates for uncertified copies, and twenty-five cents additional for each certification.

[Revised Statutes.]

SEC. 4935. Patent fees may be paid to the Commissioner of Patents, or to the Treasurer, or any of the assistant treasurers of the United States, or to any of the designated depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose; and such officer shall give the depositor a receipt or certificate of deposit therefor. All money received at the Patent Office, for any purpose, or from any source whatever, shall be paid into the Treasury as received, without any deduction whatever.

SEC. 4936. The Treasurer of the United States is authorized to pay back any sum or sums of money to any person who has through mistake paid the same into the Treasury, or to any receiver or depositary, to the credit of the Treasury, as for fees accruing at the Patent Office, upon a certificate thereof being made to the Treasurer by the Commissioner of Patents.

PATENT RIGHTS VEST IN ASSIGNEE IN BANKRUPTCY.

SEC. 5046. All property conveyed by the bankrupt in fraud of his creditors; all rights in equity, choses in action, patent rights, and copyrights; all debts due him, or any person for his use, and all liens and securities therefor; and all his rights of action for property or estate, real or personal, and for any cause of action which he had against any person arising from contract or from the unlawful taking or detention, or injury to the property of the bankrupt; and all his rights of redeeming such property or estate; together with the like right, title, power, and authority to sell, manage, dispose of, sue for, and recover or defend the same, as the bankrupt might have had if no assignment had been made, shall, in virtue of the adjudication of bankruptcy and the appointment of his assignee, but subject to the exceptions stated in the preceding section, be at once vested in such assignee.

[Act of July 1, 1898 (30 Stat., 565).]

SEC. 70. *Title to property.*—The trustee of the estate of a bankrupt, upon his appointment and qualification, and his successor or successors, if he shall have one or more, upon his or their appointment and qualification, shall in turn be vested by operation of law with the title of the bankrupt, as of the date he was adjudged a bankrupt, except in so far as it is to property which is exempt, to all (1) documents relating to his property; (2) interests in patents, patent rights, copyrights, and trade-marks.

II. RULES OF PRACTICE IN THE UNITED STATES PATENT OFFICE.

CORRESPONDENCE.

1. All business with the office should be transacted in writing. Unless by the consent of all parties, the action of the office will be based exclusively on the written record. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is a disagreement or doubt.

2. All office letters must be sent in the name of the "Commissioner of Patents." All letters and other communications intended for the office must be addressed to him; if addressed to any of the other officers, they will ordinarily be returned.

3. Express charges, freight, postage, and all other charges on matter sent to the Patent Office must be prepaid in full; otherwise it will not be received.

4. The personal attendance of applicants at the Patent Office is unnecessary. Their business can be transacted by correspondence.

5. The assignee of the entire interest of an invention is entitled to hold correspondence with the office to the exclusion of the inventor. (See rule 20.)

6. When there has been an assignment of an undivided part of an invention, amendments and other actions requiring the signature of the inventor must also receive the written assent of the assignee; but official letters will only be sent to the post-office address of the inventor, unless he shall otherwise direct.

7. When an attorney shall have filed his power of attorney, duly executed, the correspondence will be held with him.

8. A double correspondence with the inventor and an assignee, or with a principal and his attorney, or with two attorneys, can not generally be allowed.

9. A separate letter should in every case be written in relation to each distinct subject of inquiry or application. Assignments for record, final fees, and orders for copies or abstracts must be sent to the office in separate letters.

Papers sent in violation of this rule will be returned.

10. When a letter concerns an application it should state the name of the applicant, the title of the invention, the serial number of the application (see rule 31), and the date of filing the same. (See rule 32.)

11. When the letter concerns a patent it should state the name of the patentee, the title of the invention, and the number and date of the patent.

12. No attention will be paid to unverified ex parte statements or protests of persons concerning pending applications to which they are not parties, unless information of the pendency of such applications shall have been voluntarily communicated by the applicants.

13. Letters received at the office will be answered, and orders for printed copies filled, without unnecessary delay. Telegrams, if not received before 3 o'clock p. m., can not ordinarily be answered until the following day.

14. The office can not respond to inquiries as to the novelty of an alleged invention in advance of the filing of an application for a patent, nor to inquiries propounded with a view to ascertaining whether any alleged improvements have been patented, and, if so, to whom; nor can it act as an expounder of the patent law, nor as counselor for individuals, except as to questions arising within the office.

Of the propriety of making an application for a patent, the inventor must judge for himself. The office is open to him, and its records and models pertaining to all patents granted may be inspected either by himself or by any attorney or expert he may call to his aid, and its reports are widely distributed. (See rule 209.) Further than this the office can render him no assistance until his case comes regularly before it in the manner prescribed by law. A copy of the rules, with this section marked, sent to the individual making an inquiry of the character referred to, is intended as a respectful answer by the office.

Examiners' digests are not open to public inspection.

15. Caveats [1] and pending applications are preserved in secrecy. No information will be given, without authority, respecting the filing by any particular person of a caveat or of an application for a patent or for the reissue of a patent, the pendency of any particular case before the office, or the subject matter of any particular application, unless it shall be necessary to the proper conduct of business before the office, as provided by rules 97, 103, and 108.

16. After a patent has issued, the model, specification, drawings, and all documents relating to the case are subject to general inspection, and copies, except of the model, will be furnished at the rates specified in rule 203.

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[1] Sec. 4902, Revised Statutes, which provided for the filing of a caveat, was repealed by act of June 25, 1910, 36 Stat., 843.

ATTORNEYS.

17. An applicant or an assignee of the entire interest may prosecute his own case, but he is advised, unless familiar with such matters, to employ a competent patent attorney, as the value of patents depends largely upon the skillful preparation of the specification and claims. The office can not aid in the selection of an attorney.

A register of attorneys will be kept in this office, on which will be entered the names of all persons entitled to represent applicants before the Patent Office in the presentation and prosecution of applications for patent. The names of persons in the following classes will, upon their written request, be entered upon this register:

(*a*) Any attorney at law who is in good standing in any court of record in the United States or any of the States or Territories thereof and shall furnish a certificate of the clerk of such United States, State, or Territorial court, duly authenticated under the seal of the court, that he is an attorney in good standing.

(*b*) Any person not an attorney at law who is a citizen or resident of the United States and who shall file proof to the satisfaction of the commissioner that such person is of good moral character and of good repute and possessed of the necessary legal and technical qualifications to enable him to render applicants for patents valuable service and is otherwise competent to advise and assist them in the presentation and prosecution of their applications before the Patent Office.

(*c*) Any foreign patent attorney not a resident of the United States, who is a citizen or subject of a country granting the same reciprocal rights to citizens of the United States, who shall file proof to the satisfaction of the commissioner that he is registered and in good standing before the patent office of the country of which he is a citizen or subject, and is possessed of the qualifications stated in paragraph (*b*).

No foreign patent attorney will be recognized in any application filed after June 30, 1908, unless entitled to registration under the provisions of this rule.

(*d*) Any firm will be registered which shall show that the individual members composing such firm are each and all registered under the provisions of the preceding sections.

The commissioner may require proof of qualifications other than those specified in paragraph (*a*) and reserves the right to decline to recognize any attorney, agent, or other person applying for registration under this rule.

Any person or firm not registered and not entitled to be recognized under this rule as an attorney or agent to represent applicants generally may, upon a showing of circumstances which render it necessary or justifiable, be recognized by the commissioner to prosecute as attorney or agent certain specified application or applications; but this limited recognition shall not extend further than the application or applications named.

No person not registered or entitled to recognition as above provided will be permitted to prosecute applications before the Patent Office.

18. Before any attorney, original or associate, will be allowed to inspect papers or take action of any kind, his power of attorney must be filed; but general powers given by a principal to an associate can not be considered. In each application the written authorization must be filed. A power of attorney purporting to have been given to a firm or copartnership will not be recognized, either in favor of the firm or of any of its members, unless all its members shall be named in such power of attorney.

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19. Substitution or association can be made by an attorney upon the written authorization of his principal; but such authorization will not empower the second agent to appoint a third.

20. Powers of attorney may be revoked at any stage in the proceedings of a case upon application to and approval by the commissioner; and when so revoked the

office will communicate directly with the applicant, or such other attorney as he may appoint. An attorney will be promptly notified by the docket clerk of the revocation of his power of attorney. An assignment of an undivided interest will not operate as a revocation of the power previously given; but the assignee of the entire interest may be represented by an attorney of his own selection.

21. Parties or their attorneys will be permitted to examine their cases in the attorneys room, but not in the rooms of the examiners. Personal interviews with examiners will be permitted only as hereinafter provided. (See rule 152.)

22. (*a*) Applicants and attorneys will be required to conduct their business with the office with decorum and courtesy. Papers presented in violation of this requirement will be returned; but all such papers will first be submitted to the commissioner and only returned by his direct order.

(*b*) Complaints against examiners and other officers must be made in separate communications and will be promptly investigated.

(*c*) For gross misconduct the commissioner may refuse to recognize any person as a patent agent either generally or in any particular case; but the reasons for such refusal will be duly recorded and be subject to the approval of the Secretary of the Interior.

(*d*) The Secretary of the Interior may, after notice and opportunity for a hearing, suspend or exclude from further practice before the Patent Office any person, firm, corporation, or association shown to be incompetent, disreputable, or who refuses to comply with the rules and regulations thereof, or who shall, with intent to defraud, in any manner deceive, mislead, or threaten any claimant or prospective claimant, by word, circular, letter, or by advertisement, or by guaranteeing therein the successful prosecution of any application for patent or the procurement of any patent, or which word, circular, letter, or advertisement shall contain therein any false promise or misleading representation. (Sec. 5, act approved July 4, 1884, 23 Stat., 101.)

23. Inasmuch as applications can not be examined out of their regular order, except in accordance with the provisions of rule 63, and Members of Congress can neither examine nor act in patent cases without written powers of attorney, applicants are advised not to impose upon Senators or Representatives labor which will consume their time without any advantageous results.

APPLICANTS.

24. A patent may be obtained by any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application, and not patented in a country foreign to the United States on an application filed more than 12 months before his application, and not in public use or on sale in the United States for more than two years prior to his application, unless the same is proved to have been abandoned, upon payment of the fees required by law and other due proceedings had. (For designs, see rule 79.)

25. In case of the death of the inventor, the application will be made by and the patent will issue to his executor or administrator. In such case the oath required by rule 46 will be made by the executor or administrator. In case of the death of the inventor during the time intervening between the filing of his application and the granting of a patent thereon, the letters patent will issue to the executor or administrator upon proper intervention by him. The executor or administrator duly authorized under the law of any foreign country to administer upon the estate of the deceased inventor shall, in case the said inventor was not domiciled in the United States at the time of his death, have the right to apply for and obtain the patent.

The authority of such foreign executor or administrator shall be proved by certificate of a diplomatic or consular officer of the United States.

In case an inventor becomes insane, the application may be made by and the patent issued to his legally appointed guardian, conservator, or representative, who will make the oath required by rule 46.

26. In case of an assignment of the whole interest in the invention, or of the whole interest in the patent to be granted, the patent will, upon request of the applicant embodied in the assignment, issue to the assignee; and if the assignee hold an undivided part interest, the patent will, upon like request, issue jointly to the inventor and the assignee; but the assignment in either case must first have been entered of record, and at a day not later than the date of the payment of the final fee (see rule 200); and if it be dated subsequently to the execution of the application it must give the date of execution of the application, or the date of filing, or the serial number, so that there can be no mistake as to the particular invention intended. The application and oath must be signed by the actual inventor, if alive, even if the patent is to issue to an assignee (see rules 30, 40); if the inventor be dead, the application may be made by the executor or administrator.

27. If it appear that the inventor, at the time of making his application, believed himself to be the first inventor or discoverer, a patent will not be refused on account of the invention or discovery ,or any part thereof, having been known or used in any foreign country before his invention or discovery thereof, if it had not been before patented or described in any printed publication.

28. Joint inventors are entitled to a joint patent; neither of them can obtain a patent for an invention jointly invented by them. Independent inventors of distinct and independent improvements in the same machine can not obtain a joint patent for their separate inventions. The fact that one person furnishes the capital and another makes the invention does not entitle them to make an application as joint inventors; but in such case they may become joint patentees, upon the conditions prescribed in rule 26.

29. The receipt of letters patent from a foreign Government will not prevent the inventor from obtaining a patent in the United States unless the application on which the foreign patent was granted was filed more than 12 months prior to the filing of the application in this country, in which case no patent shall be granted in this country.

THE APPLICATION.

30. Applications for letters patent of the United States must be made to the Commissioner of Patents, and must be signed by the inventor, if alive. (See rules 26, 33, 40, 46.) A complete application comprises the first fee of $15, a petition, specification, and oath; and drawings, model, or specimen when required. (See rules 49, 56, 62.) The petition, specification, and oath must be in the English language. All papers which are to become a part of the permanent records of the office must be legibly written or printed in permanent ink.

31. An application for a patent will not be placed upon the files for examination until all its parts, except the model or specimen, are received.

Every application signed or sworn to in blank, or without actual inspection by the applicant of the petition and specification, and every application altered or partly filled up after being signed or sworn to, will be stricken from the files.

Completed applications are numbered in regular order, the present series having been commenced on the 1st of January, 1900.

The applicant will be informed of the serial number of his application.

The application must be completed and prepared for examination within one year after the filing of the petition; and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action thereon (rule 77), of which notice shall have been duly mailed to him or his agent, the application will be regarded as

abandoned, unless it shall be shown to the satisfaction of the commissioner that such delay was unavoidable. (See rules 171 and 172.)

32. It is desirable that all parts of the complete application should be deposited in the office at the same time, and that all the papers embraced in the application should be attached together; otherwise a letter must accompany each part, accurately and clearly connecting it with the other parts of the application. (See rule 10.)

THE PETITION.

33. The petition must be addressed to the Commissioner of Patents, and must state the name, residence, and post-office address of the petitioner requesting the grant of a patent, designate by title the invention sought to be patented, contain a reference to the specifications for a full disclosure of such invention, and must be signed by the applicant.

THE SPECIFICATION.

34. The specification is a written description of the invention or discovery and of the manner and process of making, constructing, compounding, and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make, construct, compound, and use the same.

35. The specification must set forth the precise invention for which a patent is solicited, and explain the principle thereof, and the best mode in which the applicant has contemplated applying that principle, in such manner as to distinguish it from other inventions.

36. In case of a mere improvement, the specification must particularly point out the parts to which the improvement relates, and must by explicit language distinguish between what is old and what is claimed as new; and the description and the drawings, as well as the claims, should be confined to the specific improvement and such parts as necessarily cooperate with it.

37. The specification must conclude with a specific and distinct claim or claims of the part, improvement, or combination which the applicant regards as his invention or discovery.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

39. The following order of arrangement should be observed in framing the specification:

(1) Preamble stating the name and residence of the applicant and the title of the invention.

(2) General statement of the object and nature of the invention.

(3) Brief description of the several views of the drawings (if the invention admits of such illustration).

(4) Detailed description.

(5) Claim or claims.

(6) Signature of inventor.

(7) Signatures of two witnesses.

40. The specification must be signed by the inventor or by his executor or administrator, and the signature must be attested by two witnesses. Full names must be given, and all names, whether of applicants or witnesses, must be legibly written.

41. Two or more independent inventions can not be claimed in one application but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application.

42. If several inventions, claimed in a single application, be of such a nature that a single patent may not be issued to cover them, the inventor will be required to limit the description, drawing, and claim of the pending application to whichever

invention he may elect. The other inventions may be made the subjects of separate applications, which must conform to the rules applicable to original applications. If the independence of the inventions be clear, such limitation will be made before any action upon the merits; otherwise it may be made at any time before final action thereon, in the discretion of the examiner.

43. When an applicant files two or more applications relating to the same subject matter of invention, all showing but only one claiming the same thing, the applications not claiming it must contain references to the application claiming it.

44. A reservation for a future application of subject matter disclosed but not claimed in a pending application, but which subject matter might be claimed therein, will not be permitted in the pending application.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

THE OATH.

46. The applicant, if the inventor, must make oath or affirmation that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent; that he does not know and does not believe that the same was ever before known or used, and shall state of what country he is a citizen and where he resides, and whether he is a sole or joint inventor of the invention claimed in his application. In every original application the applicant must distinctly state under oath that the invention has not been patented to himself or to others with his knowledge or consent in this or any foreign country for more than two years prior to his application, or on an application for a patent filed in any foreign country by himself or his legal representatives or assigns more than twelve months prior to his application. If any application for patent has been filed in any foreign country by the applicant in this country, or by his legal representatives or assigns, prior to his application in this country, he shall state the country or countries in which such application has been filed, giving the date of such application, and shall also state that no application has been filed in any other country or countries than those mentioned, and if no application for patent has been filed in any foreign country, he shall so state; that to the best of his knowledge and belief the invention has not been in public use or on sale in the United States, nor described in any printed publication or patent in this or in any foreign country, for more than two years prior to his application in this country. This oath must be subscribed to by the affiant.

The commissioner may require an additional oath in cases where the applications have not been filed in the Patent Office within a reasonable time after the execution of the original oath.

47. If the application be made by an executor or administrator of a deceased person, or the guardian, conservator, or representative of an insane person, the form of the oath will be correspondingly changed.

The oath or affirmation may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States, or before any notary public, judge, or magistrate having an official seal and authorized to administer oaths in the the foreign country in which the applicant may be, whose authority shall be proved by a certificate of a diplomatic or consular officer of the United States, the oath being attested in all cases in this and other countries, by the proper official seal of the officer before whom the oath or affirmation is made, except that no acknowledgment

may be taken by any attorney appearing in the case. When the person before whom the oath or affirmation is made is not provided with a seal, his official character shall be established by competent evidence, as by a certificate from a clerk of a court of record or other proper officer having a seal.

When the oath is taken before an officer in any country including the United States, all the application papers must be attached together and a ribbon or tape passed one or more times through all the sheets of the application, and the ends of said ribbon or tape brought together under the seal before the latter is affixed and impressed, or each sheet must be impressed with the official seal of the officer before whom the oath was taken, or, if he is not provided with a seal, then each sheet must be initialed by him.

48. When an applicant presents a claim for matter originally shown or described but not substantially embraced in the statement of invention or claim originally presented, he will file a supplemental oath to the effect that the subject matter of the proposed amendment was part of his invention, was invented before he filed his original application, was not known or used before his invention, was not patented or described in a printed publication in any country more than two years before his application, was not patented to himself or to others with his knowledge or consent in this or any foreign country on an application filed more than 12 months prior to his application, was not in public use or on sale in this country for more than two years before the date of his application, and has not been abandoned. Such supplemental oath must be attached to and properly identify the proposed amendment.

THE DRAWINGS.

49. The applicant for a patent is required by law to furnish a drawing of his invention whenever the nature of the case admits of it.

50. The drawing may be signed by the inventor, or the name of the inventor may be signed on the drawing by his attorney in fact, and must be attested by two witnesses. The drawing must show every feature of the invention covered by the claims, and the figures should be consecutively numbered, if possible. When the invention consists of an improvement on an old machine the drawing must exhibit, in one or more views, the invention itself, disconnected from the old structure, and also in another view so much only of the old structure as will suffice to show the connection of the invention therewith.

51. Three several editions of patent drawings are printed and published—one for office use, certified copies, etc., of the size and character of those attached to patents, the work being about 6 by 9½ inches; one reduced to half that scale, or one-fourth the surface, of which four are printed on a page to illustrate the volumes distributed to the courts; and one reduction—to about the same scale—of a selected portion of each drawing for the Official Gazette.

52. This work is done by the photolithographic process, and therefore the character of each original drawing must be brought as nearly as possible to a uniform standard of excellence, suited to the requirements of the process, and calculated to give the best results, in the interests of inventors, of the office, and of the public. The following rules will therefore be rigidly enforced, and any departure from them will be certain to cause delay in the examination of an application for letters patent:

(1) Drawings must be made upon pure white paper of a thickness corresponding to three-sheet bristol board. The surface of the paper must be calendered and smooth. India ink alone must be used to secure perfectly black and solid lines.

(2) The size of a sheet on which a drawing is made must be exactly 10 by 15 inches. One inch from its edges a single marginal line is to be drawn, leaving the "sight" precisely 8 by 13 inches. Within this margin all work and signatures must be included. One of the shorter sides of the sheet is regarded as its top, and, measuring downwardly from the marginal line, a space of not less than 1¼ inches is to be left blank for the heading of title, name, number, and date.

(3) All drawings must be made with the pen only. Every line and letter (signatures included) must be absolutely black. This direction applies to all lines, however fine, to shading, and to lines representing cut surfaces in sectional views. All lines must be clean, sharp, and solid, and they must not be too fine or crowded. Surface shading, when used, should be open. Sectional shading should be made by oblique parallel lines, which may be about one-twentieth of an inch apart. Solid black should not be used for sectional or surface shading.

(4) Drawings should be made with the fewest lines possible consistent with clearness. By the observance of this rule the effectiveness of the work after reduction will be much increased. Shading (except on sectional views) should be used only on convex and concave surfaces, where it should be used sparingly, and may even there be dispensed with if the drawing is otherwise well executed. The plane upon which a sectional view is taken should be indicated on the general view by a broken or dotted line. Heavy lines on the shade sides of objects should be used, except where they tend to thicken the work and obscure letters of reference. The light is always supposed to come from the upper left-hand corner at an angle of 45 degrees. Imitations of wood or surface graining should not be attempted.

(5) The scale to which a drawing is made ought to be large enough to show the mechanism without crowding, and two or more sheets should be used if one does not give sufficient room to accomplish this end; but the number of sheets must never be more than is absolutely necessary.

(6) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing, it must always be represented by the same character, and the same character must never be used to designate different parts.

(7) The signature of the inventor should be placed at the lower right-hand corner of each sheet, and the signatures of the witnesses at the lower left-hand corner, all within the marginal line, but in no instance should they trespass upon the drawings. The title should be written with pencil on the back of the sheet. The permanent names and title will be supplied subsequently by the office in uniform style.

When views are longer than the width of the sheet, the sheet should be turned on its side and the heading will be placed at the right and the signatures at the left, occupying the same space and position as in the upright views, and being horizontal when the sheet is held in an upright position; and all views on the same sheet must stand in the same direction. One figure must not be placed upon another or within the outline of another.

(8) As a rule, one view only of each invention can be shown in the Gazette illustrations. The selection of that portion of a drawing best calculated to explain the nature of the specific improvement would be facilitated and the final result improved by the judicious execution of a figure with express reference to the Gazette, but which might at the same time serve as one of the figures referred to in the specification. For this purpose the figure may be a plan, elevation, section, or perspective view, according to the judgment of the draftsman. It must not cover a space exceeding 16 square inches. All its parts should be especially open and distinct, with very little or no

shading, and it must illustrate the invention claimed only, to the exclusion of all other details. When well executed, it will be used without curtailment or change, but any excessive fineness, or crowding, or unnecessary elaborateness of detail will necessitate its exclusion from the Gazette.

(9) Drawings transmitted to the office should be sent flat, protected by a sheet of heavy binder's board; or should be rolled for transmission in a suitable mailing tube, but should never be folded.

An agent's or attorney's stamp, or advertisement, or written address will not be permitted upon the face of a drawing, within or without the marginal line.

53. All reissue applications must be accompanied by new drawings, of the character required in original applications, and the inventor's name must appear upon the same in all cases; and such drawings shall be made upon the same scale as the original drawing, or upon a larger scale, unless a reduction of scale shall be authorized by the commissioner.

54. The foregoing rules relating to drawings will be rigidly enforced. Every drawing not artistically executed in conformity thereto may be admitted for purposes of examination if it sufficiently illustrates the invention, but in such cases a new drawing must be furnished before the application can be allowed. The office will make the necessary corrections at the applicant's option and cost.

55. Applicants are advised to employ competent artists to make their drawings.

The office will furnish the drawings at cost, as promptly as its draftsmen can make them, for applicants who can not otherwise conveniently procure them.

THE MODEL.

56. Preliminary examinations will not be made for the purpose of determining whether models are required in particular cases. Applications complete in all other respects will be sent to the examining divisions, whether models are or are not furnished. A model will only be required or admitted as a part of the application when on examination of the case in its regular order the primary examiner shall find it to be necessary or useful. In such case, if a model has not been furnished, the examiner shall notify the applicant of such requirement, which will constitute an official action in the case. When a model is received in compliance with the official requirement, the date of its filing shall be entered on the file wrapper. Models not required nor admitted will be returned to the applicants. When a model is required, the examination will be suspended until it shall have been filed. From a decision of the primary examiner overruling a motion to dispense with a model an appeal may be taken to the commissioner in person, under the provisions of Rule 145.

57. The model must clearly exhibit every feature of the machine which forms the subject of a claim of invention, but should not include other matter than that covered by the actual invention or improvement, unless it be necessary to the exhibition of the invention in a working model.

58. The model must be neatly and substantially made of durable material, metal being deemed preferable; but when the material forms an essential feature of the invention the model should be constructed of that material. The model must not be more than 1 foot in length, width, or height, except in cases in which the commissioner shall admit working models of complicated machines of larger dimensions. If made of wood, it must be painted or varnished. Glue must not be used; but the parts should be so connected as to resist the action of heat and moisture. When practicable, to prevent loss, the model or specimen should have the name of the inventor permanently fixed thereon. In cases where models are not made strong and substantial as here directed, the application will not be examined until a proper model is furnished.

59. A working model is often desirable, in order to enable the office fully and readily to understand the precise operation of the machine.

60. In all applications which have remained rejected for more than one year, the model, unless it is deemed necessary that it should be preserved in the office, may be returned to the applicant upon demand and at his expense; and the model in any pending case of less than one year's standing may be returned to the applicant upon the filing of a formal abandonment of the application, signed by the applicant in person and any assignee. (See rule 171.)

Models belonging to patented cases shall not be taken from the office except in the custody of some sworn employee of the office specially authorized by the commissioner.

61. Models filed as exhibits in contested cases may be returned to the parties at their expense. If not claimed within a reasonable time, they may be disposed of at the discretion of the commissioner.

62. When the invention or discovery is a composition of matter, the applicant, if required by the commissioner, shall furnish specimens of the composition and of its ingredients, sufficient in quantity for the purpose of experiment. In all cases where the article is not perishable, a specimen of the composition claimed, put up in proper form to be preserved by the office, must be furnished. (Rules 56, 60, and 61 apply to specimens also.)

THE EXAMINATION.

63. Applications filed in the Patent Office are classified according to the various arts, and are taken up for examination in regular order of filing, those in the same class of invention being examined and disposed of, as far as practicable, in the order in which the respective applications are completed.

The following new applications have preference over all other new cases at every period of their examination, in the order enumerated:

(1) Applications wherein the inventions are deemed of peculiar importance to some branch of the public service, and when for that reason the head of some department of the Government requests immediate action and the commissioner so orders, but in such case it shall be the duty of such head of a department to be represented before the commissioner in order to prevent the improper issue of a patent.

(2) Applications for reissues.

(3) Applications which appear to interfere with other applications previously considered and found to be allowable, or which it is demanded shall be placed in interference with an unexpired patent or patents.

The following applications, previously acted upon, will have preference over other business:

(1) Cases remanded by an appellate tribunal for further action, and statements of grounds of decisions provided for in rules 135 and 145.

(2) Applications which have been put into condition for further action by the examiner shall be entitled to precedence over new applications in the same class of invention.

(3) Applications which have been renewed or revived, but the subject matter not changed.

(4) When the inventor dies and his executor or administrator files a new application for the same invention, the new application may be given the same status in the order of examination as the original, by order of the commissioners.

64. Where the specification and claims are such that the invention may be readily understood, the examination of a complete application and the action thereon will be directed throughout to the merits; but in each letter the examiner shall state or refer to all his objections.

Only in applications found by the examiner to present patentable subject matter and in applications on which appeal is taken to the examiners in chief will requirements in matters of form be insisted on. (See rules 95 and 134.)

REJECTIONS AND REFERENCES.

65. Whenever, on examination, any claim of an application is rejected for any reason whatever, the applicant will be notified thereof. The reasons for such rejection will be fully and precisely stated, and such information and references will be given as may be useful in aiding the applicant to judge of the propriety of prosecuting his application or of altering his specification, and if, after receiving such notice, he shall persist in his claim, with or without altering his specification, the application will be reexamined. If upon reexamination the claim shall be again rejected, the reasons therefor will be fully and precisely stated.

66. Upon the rejection of an application for want of novelty, the examiner must cite the best references at his command. When the reference shows or describes inventions other than that claimed by the applicant, the particular part relied on will be designated as nearly as practicable. The pertinence of the reference, if not obvious, must be clearly explained and the anticipated claim specified.

If domestic patents be cited, their dates and numbers, the names of the patentees, and the classes of invention must be stated. If foreign patents be cited, their dates and numbers, the names of the patentees, titles of the inventions, and the classes of inventions must be stated, and such other data must be furnished as will enable the applicant to identify the patents cited. If printed publications be cited, the title, date, page or plate, author, and place of publication, or place where a copy can be found, will be given. When reference is made to facts within the personal knowledge of an employee of the office, the data will be as specific as possible, and the reference must be supported, when called for, by the affidavit of such employee (rule 76); such affidavit shall be subject to contradiction, explanation, or corroboration by the affidavits of the applicant and other persons. If the patent, printed matter, plates, or drawings so referred to are in the possession of the office, copies will be furnished at the rate specified in rule 203, upon the order of the applicant.

67. Whenever, in the treatment of an ex parte application, an adverse decision is made upon any preliminary or intermediate question, without the rejection of any claim, notice thereof, together with the reasons therefor, will be given to the applicant, in order that he may judge of the propriety of the action. If, after receiving such notice, he traverse the propriety of the action, the matter will be reconsidered.

AMENDMENTS AND ACTIONS BY APPLICANTS.

68. The applicant has a right to amend before or after the first rejection or action, and he may amend as often as the examiner presents new references or reasons for rejection. In so amending, the applicant must clearly point out all the patentable novelty which he thinks the case presents in view of the state of the art disclosed by the references cited or the objections made. He must also show how the amendments avoid such references or objections.

After such action upon an application as will entitle the applicant to an appeal to the examiners in chief (rule 134), or after such appeal has been taken, amendments canceling claims or presenting those rejected in better form for consideration on appeal may be admitted, but the admission of such an amendment or its refusal, and any proceedings relative thereto, shall not operate to relieve the application from its condition as subject to appeal, or to save it from abandonment under rule 171. If amendments touching the merits of the application are presented after the case is in condition for appeal, or after appeal has been taken, they may be admitted upon a showing, duly verified, of good and sufficient reasons why they were not earlier presented. From the refusal of the primary examiner to admit an amendment a petition will lie to the commissioner under rule 145. No amendment can be made in appealed cases between the filing of the examiner's statement of the grounds of his decision (rule

135) and the decision of the appellate tribunal. After decision on appeal amendments can only be made as provided in rule 142, or to carry into effect a recommendation under rule 139.

69. In order to be entitled to the reconsideration provided for in rules 65 and 67, the applicant must make request therefor in writing, and he must distinctly and specifically point out the supposed errors in the examiner's action. The mere allegation that the examiner has erred will not be received as a proper reason for such reconsideration.

70. In original applications which are capable of illustration by drawing or model all amendments of the model, drawings, or specifications, and all additions thereto, must conform to at least one of them as it was at the time of the filing of the application. Matter not found in either, involving a departure from the original invention, can be shown or claimed only in a separate application.

71. The specification and drawing must be amended and revised when required, to correct inaccuracies of description or unnecessary prolixity and to secure correspondence between the claim, the specification, and the drawing. But no change in the drawing may be made except by written permission of the office and after a photographic copy of the drawing as originally presented has been filed.

72. After the completion of the application the office will not return the specification for any purpose whatever. If applicants have not preserved copies of the papers which they wish to amend, the office will furnish them on the usual terms.

The drawing may be withdrawn only for such corrections as can not be made by the office; but a drawing can not be withdrawn unless a photographic copy has been filed and accepted by the examiner as a part of the application. Permissible changes in the construction shown in any drawing may be made only within the office and after an approved photographic copy has been filed. Substitute drawings will not be admitted in any case unless required by the office.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

Amendments and papers requiring the signature of the applicant must also, in case of assignment of an undivided part of the invention, be signed by the assignee. (Rules 6, 107.)

74. When an amendatory clause is amended it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the examiner or commissioner may require the entire specification to be rewritten.

75. When an original or reissue application is rejected on reference to an expired or unexpired domestic patent which substantially shows or describes but does not claim the rejected invention, or on reference to a foreign patent or to a printed publication, and the applicant shall make oath to the facts showing a completion of the invention in this country before the filing of the application on which the domestic patent issued, or before the date of the foreign patent, or before the date of the printed publication, and shall also make oath that he does not know and does not believe that the invention has been in public use or on sale in this country, or patented or described in a printed publication in this or any foreign country for more than two years prior to his application, and that he has never abandoned the invention, then the patent or publication cited will not bar the grant of a patent to the applicant, unless the date of such patent or printed publication is more than two years prior to the date on which application was filed in this country.

76. When an application is rejected on reference to an expired or unexpired domestic patent which shows or describes but does not claim the invention, or on reference to a foreign patent, or to a printed publication, or to facts within the personal knowledge of an employee of the office, set forth in an affidavit (when requested) of such employee (rule 66), or when rejected on the ground of public use or sale, or upon a mode or capability of operation attributed to a reference or because the alleged invention is held to be inoperative or frivolous or injurious to public health or morals, affidavits or depositions supporting or traversing these references or objections may be received, but affidavits will not be received in other cases without special permission of the commissioner. (See rule 141.)

77. If an applicant neglect to prosecute his application for one year after the date when the last official notice of any action by the office was mailed to him, the application will be held to be abandoned, as set forth in rule 171.

Whenever action upon an application is suspended upon request of an applicant, and whenever an applicant has been called upon to put his application in condition for interference, the period of one year running against such application shall be considered as beginning at the date of the last official action preceding such actions.

Acknowledgment of the filing of an application is an official action. Suspensions will only be granted for good and sufficient cause, and for a reasonable time specified.

Only one suspension will be granted by the primary examiner; any further suspension must be approved by the commissioner.

78. Amendments will not be permitted after the notice of allowance of an application, and the examiner will exercise jurisdiction over such an application only by special authority from the commissioner.

Amendments may be made after the allowance of an application, and after payment of the final fee, if the specification has not been printed, on the recommendation of the primary examiner, approved by the commissioner, without withdrawing the case from issue. (See rule 135.)

DESIGNS.

79. A design patent may be obtained by any person who has invented any new, original, and ornamental design for an article of manufacture, not known or used by others in this country before his invention thereof, and not patented or described in any printed publication in this or any foreign country before his invention thereof, or more than two years prior to his application, and not caused to be patented by him in a foreign country on an application filed more than four months before his application in this country, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, upon payment of the fees required by law and other due proceedings had, the same as in cases of inventions or discoveries.

80. Patents for designs are granted for the term of three and one-half years, or for seven years, or for fourteen years, as the applicant may, in his application, elect.

81. The proceedings in applications for patents for designs are substantially the same as in applications for other patents. Since a design patent gives to the patentee the exclusive right to make, use, and vend articles having the appearance of that disclosed, and since the appearance can be disclosed only by a picture of the article, the claim should be in the broadest form for the article as shown.

82. The following order of arrangement should be observed in framing design specifications:

(1) Preamble, stating name and residence of the applicant, title of the design, and the name of the article for which the design has been invented.

(2) Description of the figure or figures of the drawing.

(3) Claim.

(4) Signature of inventor.

(5) Signatures of two witnesses.

83. When the design can be sufficiently represented by drawings a model will not be required.

84. The design must be represented by a drawing made to conform to the rules laid down for drawings of mechanical inventions.

REISSUES.

85. A reissue is granted to the original patentee, his legal representatives, or the assignees of the entire interest, when the original patent is inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his invention or discovery more than he had a right to claim as new, provided the error has arisen through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention.

Reissue applications must be made and the specifications sworn to by the inventors, if they be living.

86. The petition for a reissue must be accompanied by an order for a certified copy of the abstract of title to be placed in the file, giving the names of all assignees owning any undivided interest in the patent. In case the application be made by the inventor it must be accompanied by the written assent of such assignees.

87. Applicants for reissue, in addition to the requirements of rule 46, must also file with their petitions a statement on oath as follows:

(1) That applicant verily believes the original patent to be inoperative or invalid, and the reason why.

(2) When it is claimed that such patent is so inoperative or invalid "by reason of a defective or insufficient specification," particularly specifying such defects or insufficiencies.

(3) When it is claimed that such patent is inoperative or invalid "by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new," distinctly specifying the part or parts so alleged to have been improperly claimed as new.

(4) Particularly specifying the errors which it is claimed constitute the inadvertence, accident, or mistake relied upon, and how they arose or occurred.

(5) That said errors arose "without any fraudulent or deceptive intention" on the part of the applicant.

88. New matter shall not be allowed to be introduced into the reissue specification, nor in the case of a machine shall the model or drawings be amended except each by the other.

89. The commissioner may, in his discretion, cause several patents to be issued for distinct and separate parts of the thing patented, upon demand of the applicant, and upon payment of the required fee for each division of such reissued letters patent. Each division of a reissue constitutes the subject of a separate specification descriptive of the part or parts of the invention claimed in such division; and the drawing may represent only such part or parts, subject to the provisions of rule 50. Unless otherwise ordered by the commissioner, all the divisions of an issue will issue simultaneously; if there be any controversy as to one division, the others will be withheld from issue until the controversy is ended, unless the commissioner shall otherwise order.

90. An original claim, if reproduced in the reissue specification, is subject to reexamination, and the entire application will be revised and restricted in the same manner as original applications.

91. The application for a reissue must be accompanied by the original patent and an offer to surrender the same, or, if the original be lost, by an affidavit to that effect, and a certified copy of the patent. If a reissue be refused, the original patent will be returned to applicant upon his request.

92. Matter shown and described in an unexpired patent, and which might have been lawfully claimed therein, but which was not claimed by reason of a defect or insufficiency in the specification, arising from inadvertence, accident, or mistake, and without fraud or deceptive intent, can not be subsequently claimed by the patentee in a separate patent, but only in a reissue of the original patent.

INTERFERENCES.

93. An interference is a proceeding instituted for the purpose of determining the question of priority of invention between two or more parties claiming substantially the same patentable invention. The fact that one of the parties has already obtained a patent will not prevent an interference, for, although the commissioner has no power to cancel a patent, he may grant another patent for the same invention to a person who proves to be the prior inventor.

94. Interferences will be declared in the following cases, when all the parties claim substantially the same patentable invention:

(1) Between two or more original applications containing conflicting claims.

(2) Between an original application and an unexpired patent containing conflicting claims, when the applicant, having been rejected on the patent, shall file an affidavit that he made the invention before the patentee's application was filed.

(3) Between an original application and an application for the reissue of a patent granted during the pendency of such original application.

(4) Between an original application and a reissue application, when the original applicant shall file an affidavit showing that he made the invention before the patentee's original application was filed.

(5) Between two or more applications for the reissue of patents granted on applications pending at the same time.

(6) Between two or more applications for the reissue of patents granted on applications not pending at the same time, when the applicant for reissue of the later patent shall file an affidavit showing that he made the invention before the application was filed on which the earlier patent was granted.

(7) Between a reissue application and an unexpired patent, if the original applications were pending at the same time, and the reissue applicant shall file an affidavit showing that he made the invention before the original application of the other patentee was filed.

(8) Between an application for reissue of a later unexpired patent and an earlier unexpired patent granted before the original application of the later patent was filed, if the reissue applicant shall file an affidavit showing that he made the invention before the original application of the earlier patent was filed.

(9) An interference will not be declared between an original application filed subsequently to December 31, 1897, and a patent issued more than two years prior to the date of filing such application or an application for a reissue of such a patent.

95. Before the declaration of interference all preliminary questions must be settled by the primary examiner, and the issue must be clearly defined; the invention which is to form the subject of the controversy must be decided to be patentable, and the claims of the respective parties must be put in such condition that they will not require alteration after the interference shall have been finally decided, unless the testimony adduced upon the trial shall necessitate or justify such change.

96. Whenever the claims of two or more applications differ in phraseology, but cover substantially the same patentable subject-matter, the examiner, when one of the applications is ready for allowance, will suggest to the parties such claims as are necessary to cover the common invention in substantially the same language. The examiner will send copies of the letter suggesting claims to the applicant and to the assignees, as well as to the attorney of record in each case. The parties to whom the claims are suggested will be required to make such claims and put the applications

in condition for allowance within a specified time in order that an interference may be declared. Upon the failure of any applicant to make the claim suggested within the time specified, such failure or refusal shall be taken without further action as a disclaimer of the invention covered by the claim, and the issue of the patent to the applicant whose application is in condition for allowance will not be delayed unless the time for making the claim and putting the application in condition for allowance be extended upon a proper showing. If a party make the claim without putting his application in condition for allowance, the declaration of the interference will not be delayed, but after judgment of priority the application of such party will be held for revision and restriction, subject to interference with other applications.

97. When an interference is found to exist and the applications are prepared therefor, the primary examiner will forward to the examiner of interferences the files and drawings; notice of interference for all the parties (as specified in rule 103) disclosing the name and residence of each party and that of his attorney, and of any assignee, and, if any party be a patentee, the date and number of the patent; the ordinals of the conflicting claims and the title of the invention claimed; and the issue, which shall be clearly and concisely defined in so many counts or branches as may be necessary in order to include all interfering claims. Where the issue is stated in more than one count the respective claims involved in each count should be specified. The primary examiner shall also forward to the examiner of interferences for his use a statement disclosing the applications involved in interference, fully identified, the name and residence of any assignee, and the names and residences of all attorneys, both principal and associate, and arranged in the inverse chronological order of their filing as completed applications, and also disclosing the issue or issues and the ordinals of the conflicting claims.

Whenever it shall be found that two or more parties whose interests are in conflict are represented by the same attorney, the examiner will notify each of said principal parties, and also the attorney, of this fact.

98. Upon receipt of the notices of interference, the examiner of interferences will make an examination thereof, in order to ascertain whether the issue between the parties has been clearly defined and whether they are otherwise correct. If he be of the opinion that the notices are ambiguous or are defective in any material point, he will transmit his objections to the primary examiner, who will promptly notify the examiner of interferences of his decision to amend or not to amend them.

99. In case of a material disagreement between the examiner of interferences and the primary examiner, the points of difference shall be referred to the commissioner for decision.

100. The primary examiner will retain jurisdiction of the case until the declaration of interference is made.

101. Upon the institution and declaration of the interference, as provided in rule 102, the examiner of interferences will take jurisdiction of the same, which will then become a contested case; but the primary examiner will determine the motions mentioned in rule 122, as therein provided.

102. When the notices of interference are in proper form, the examiner of interferences will add thereto a designation of the time within which the preliminary statements required by rule 110 must be filed, and will, pro forma, institute and declare the interference by forwarding the notices to the several parties to the proceeding.

103. The notices of interference will be forwarded by the examiner of interferences to all the parties, in care of their attorneys, if they have attorneys, and, if the application or patent in interference has been assigned, to the assignees. When one of the parties has received a patent a notice will be sent to the patentee and to his attorney of record.

When the notices sent in the interest of a patent are returned to the office undelivered, or when one of the parties resides abroad and his agent in the United States is

unknown, additional notice may be given by publication in the Official Gazette for such period of time as the commissioner may direct.

104. If either party require a postponement of the time for filing his preliminary statement, he will present his motion, duly served on the other parties, with his reasons therefor, supported by affidavit, and such motion should be made, if possible, prior to the day previously fixed upon. But the examiner of interferences may, in his discretion, extend such time on ex parte request or upon his own motion.

105. When an application is involved in an interference in which a part only of the invention is included in the issue, the applicant may file certified copies of the part or parts of the specification, claims, and drawings which cover the interfering matter, and such copies may be used in the proceeding in place of the original application.

106. When a part only of an application is involved in an interference, the applicant may withdraw from his application the subject-matter adjudged not to interfere, and file a new application therefor, or he may file a divisional application for the subject-matter involved, if the invention can be legitimately divided: *Provided*, That no claim shall be made in either application broad enough to include matter claimed in the other.

107. An applicant involved in an interference may, with the written consent of the assignee, when there has been an assignment, before the date fixed for the filing of his preliminary statement (see rule 110), in order to avoid the continuance of the interference, disclaim under his own signature, attested by two witnesses, the invention of the particular matter in issue, and upon such disclaimer and the cancellation of any claims involving such interfering matter, judgment shall be rendered against him, and a copy of the disclaimer shall be embodied in and form part of his specification. (See rule 182.)

108. When applications are declared to be in interference, the interfering parties will be permitted to see or obtain copies of each other's file wrappers, and so much of their contents as relates to the interference, after the preliminary statements referred to in rule 110 have been received and approved; but information of an application will not be furnished by the office to an opposing party, except as provided in rules 97 and 103, until after the approval of such statements.

109. An applicant involved in an interference may, at any time within 30 days after the preliminary statements (referred to in rule 110) of the parties have been received and approved, on motion duly made, as provided by rule 153, file an amendment to his application containing any claims which in his opinion should be made the basis of interference between himself and any of the other parties. Such motion must be accompanied by the proposed amendment, and when in proper form will be transmitted by the examiner of interferences to the primary examiner for his determination. On the admission of such amendment, and the adoption of the claims by the other parties within a time specified by the examiner, as in rule 96, the interference will be redeclared, or other interferences will be declared to include the same as may be necessary. New preliminary statements will be received as to the added claims, but motions for dissolution will not be transmitted in regard thereto where the questions raised could have been disposed of in connection with the admission of the claims. Amendments to the specification will not be received during the pendency of the interference without the consent of the commissioner, except as provided herein, and in rules 106 and 107.

110. Each party to the interference will be required to file a concise preliminary statement, under oath, on or before a date to be fixed by the office, showing the following facts:

(1) The date of original conception of the invention set forth in the declaration of interference.

(2) The date upon which a drawing of the invention was made.

(3) The date upon which the invention was first disclosed to others.

(4) The date of the reduction to practice of the invention.

(5) A statement showing the extent of use of the invention.

(6) The applicant shall state the date and number of any application for the same invention filed within 12 months before the filing date in the United States, in any foreign country adhering to the International Convention for the Protection of Industrial Property or having similar treaty relations with the United States.

If a drawing has not been made, or if the invention has not been reduced to practice or disclosed to others or used to any extent, the statement must specifically disclose these facts.

When the invention was made abroad the statement should set forth:

(1) That the applicant made the invention set forth in the declaration of interference.

(2) Whether or not the invention was ever patented; if so, when and where, giving the date and number of each patent, the date of publication, and the date of sealing thereof.

(3) Whether or not the invention was ever described in a printed publication; if so, when and where, giving the title, place, and date of such publication.

(4) When the invention was introduced into this country, giving the circumstances with the dates connected therewith, which are relied upon to establish the fact.

The preliminary statements should be carefully prepared, as the parties will be strictly held in their proofs to the dates set up therein.

If a party prove any date earlier than alleged in his preliminary statement, such proof will be held to establish the date alleged and none other.

The statement must be sealed up before filing (to be opened only by the examiner of interferences; see rule 111), and the name of the party filing it, the title of the case, and the subject of the invention indicated on the envelope. The envelope should contain nothing but this statement.

111. The preliminary statements shall not be opened to the inspection of the opposing parties until each one shall have been filed, or the time for such filing, with any extension thereof, shall have expired, and not then unless they have been examined by the proper officer and found to be satisfactory.

Any party in default in filing his preliminary statement shall not have access to the preliminary statement or statements of his opponent or opponents until he has either filed his statement or waived his right thereto, and agreed to stand upon his record date.

112. If, on examination, a statement is found to be defective in any particular, the party shall be notified of the defect and wherein it consists, and a time assigned within which he must cure the same by an amended statement; but in no case will the original or amended statement be returned to the party after it has been filed. Unopened statements will be removed from interference files and preserved by the office, and in no case will such statements be open to the inspection of the opposing party without authority from the commissioner. If a party shall refuse to file an amended statement he may be restricted to his record date in the further proceedings in the interference.

113. In case of material error arising through inadvertence or mistake, the statement may be corrected on motion (see rule 153), upon a satisfactory showing that the correction is essential to the ends of justice. The motion to correct the statement must be made, if possible, before the taking of any testimony, and as soon as practicable after the discovery of the error.

114. If the junior party to an interference, or if any party thereto other than the senior party, fails to file a statement, or if his statement fails to overcome the prima facie case made by the respective dates of application, such party will be notified by the examiner of interferences that judgment upon the record will be rendered against him at the expiration of 30 days, unless cause is shown why such action should not be taken. Within this period any of the motions permitted by the rules may be brought.

Motions brought after judgment on the record has been rendered will not be entertained unless sufficient reasons appear for the delay.

115. If a party to an interference fail to file a statement, testimony will not be received subsequently from him to prove that he made the invention at a date prior to his application.

116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts.

117. The preliminary statement can in no case be used as evidence in behalf of the party making it.

118. Times will be assigned in which the junior applicant shall complete his testimony in chief, and in which the other party shall complete the testimony on his side, and a further time in which the junior applicant may take rebutting testimony; but he shall take no other testimony. If there be more than two parties to the interference the times for taking testimony will be so arranged that each shall have an opportunity to prove his case against prior applicants and to rebut their evidence, and also to meet the evidence of junior applicants.

119. Whenever the time for taking the testimony of a party to an interference shall have expired, and no testimony shall have been taken by such party, any senior party may, by motion based on a proper showing and served on such party in default, have an order entering judgment against such defaulting party, unless the latter shall, at a day set and not less than 10 days after the hearing of the motion, show good and sufficient cause why the judgment shall not be entered.

120. If either party desire to have the hearing continued he will make application for such postponement by motion (see rule 153), and will show sufficient reason therefor by affidavit.

121. If either party desire an extension of the time assigned to him for taking testimony he will make application therefor, as provided in rule 154 (4).

122. Motions to dissolve an interference (1) upon the ground that there has been such informality in declaring the same as will preclude a proper determination of the question of priority of invention, or (2) which deny the patentability of an applicant's claim, or (3) which deny his right to make the claim, or (4) which allege that counts of the issue have different meanings in the cases of different parties should contain a full statement of the grounds relied upon, and should, if possible, be made not later than the thirtieth day after the statements of the parties have been received and approved. Such motions, and all motions of a similar character, should be accompanied by a motion to transmit the same to the primary examiner, and such motion to transmit should be noticed for hearing upon a day certain before the examiner of interferences. When in proper form the motion presented will be transmitted by the examiner of interferences, with the files and papers, to the proper primary examiner for his determination, who will thereupon fix a day certain when the said motion will be heard before him upon the merits, and give notice thereof to all the parties. If a stay of proceedings be desired, a motion therefor should accompany the motion for transmission.

When the motion has been decided by the primary examiner the files and papers, with his decision, will be sent at once to the docket clerk.

Motions to shift the burden of proof should be made before, and will be determined by, the examiner of interferences. No appeal from the decision on such motions will be entertained, but the matter may be reviewed on appeal from the final decision upon the question of priority of invention.

123. All lawful motions, except those mentioned in rule 122, will be made before and determined by the tribunal having jurisdiction at the time. The filing of motions

will not operate as a stay of proceedings in any case. To effect this, motion should be made before the tribunal having jurisdiction of the interference, who will, sufficient grounds appearing therefor, order a suspension of the interference pending the determination of such motion.

124. Where, on motion for dissolution, the primary examiner renders an adverse decision upon the merits of a party's case, as when he holds that the issue is not patentable or that a party has no right to make a claim, or that the counts of the issue have different meanings in the cases of different parties, he shall fix a limit of appeal not less than twenty days from the date of his decision. Appeal lies to the examiners in chief in the first instance and will be heard inter partes. If the appeal is not taken within the time fixed, it will not be entertained except by permission of the commissioner.

No appeal will be permitted from a decision rendered upon motion for dissolution affirming the patentability of a claim or the applicant's right to make the same or the identity of meaning of counts in the cases of different parties.

Appeals may be taken directly to the commissioner, except in the cases provided for in the preceding portions of this rule, from decisions on such motions as, in his judgment, should be appealable.

125. After the interference is finally declared, it will not, except as herein otherwise provided, be determined without judgment of priority founded either upon the testimony, or upon a written concession of priority by one of the parties, signed by the inventor himself (and by the assignee, if any), or upon a written declaration of abandonment of the invention.

126. The examiner of interferences or the examiners in chief may, either before or in their decision on the question of priority, direct the attention of the commissioner to any matter not relating to priority which may have come to their notice, and which, in their opinion, establishes the fact that no interference exists, or that there has been irregularity in declaring the same (rule 122), or which amounts to a statutory bar to the grant of a patent to either of the parties for the claim or claims in interference. The commissioner may, before judgment on the question of priority, suspend the interference and remand the case to the primary examiner for his consideration of the matters to which attention has been directed. From the decision of the examiner appeal may be taken as in other cases. If the case shall not be so remanded, the primary examiner will, after judgment, consider any matter affecting the rights of either party to a patent which may have been called to his attention, unless the same shall have been previously disposed of by the commissioner.

127. A second interference will not be declared upon a new application for the same invention filed by either party.

128. If, during the pendency of an interference, a reference be found, the interference may be suspended at the request of the primary examiner until the final determination of the pertinency and effect of the reference, and the interference shall then be dissolved or continued as the result of such determination. The consideration of such reference shall be inter partes.

129. If, during the pendency of an interference, another case appear, claiming substantially the subject matter in issue, the primary examiner shall request the suspension of the interference for the purpose of adding said case. Such suspension will be granted as a matter of course by the examiner of interferences if no testimony has been taken. If, however, any testimony has been taken, a notice for the proposed new party, disclosing the issue in interference and the names and addresses of the interferants and of their attorneys, and notices for the interferants disclosing the name and address of the said party and his attorney, shall be prepared by the primary examiner and forwarded to the examiner of interferences, who shall mail said notices and set a time of hearing on the question of the admission of the new party. If the examiner of interferences be of the opinion that the interference should

be suspended and the new party added, he shall prescribe the terms for such suspension. The decision of the examiner of interferences as to the addition of a party shall be final.

130. Where the patentability of a claim to an opponent is material to the right of a party to a patent, said party may urge the nonpatentability of the claim to his opponent at final hearing before the examiner of interferences as a basis for the decision upon priority of invention, and upon appeals from such decision. A party shall not be entitled to take such step, however, unless he has duly presented and prosecuted a motion under rule 122 for dissolution upon the ground in question, or shows good reason why such a motion was not presented and prosecuted.

131. When, on motion duly made and upon satisfactory proof, it shall be shown that, by reason of the inability or refusal of the inventor to prosecute or defend an interference, or from other cause, the ends of justice require that an assignee of an undivided interest in the invention should be permitted to prosecute or defend the same, it may be so ordered.

132. Whenever an award of priority has been rendered in an interference proceeding by any tribunal and the limit of appeal from such decision has expired, and whenever an interference has been terminated by reason of the written concession, signed by the applicant in person, of priority of invention in favor of his opponent or opponents, the primary examiner shall advise the defeated or unsuccessful party or parties to the interference that their claim or claims which were so involved in the issue stand finally rejected.

APPEALS.

133. Every applicant for a patent, any of the claims of whose application have been twice rejected for the same reasons, upon grounds involving the merits of the invention, such as lack of invention, novelty, or utility, or on the ground of abandonment, public use or sale, inoperativeness of invention, aggregation of elements, incomplete combination of elements, or, when amended, for want of identity with the invention originally disclosed, or because the amendment involves a departure from the invention originally presented; and every applicant who has been required to divide his application, and every applicant for the reissue of a patent whose claims have been twice rejected for any of the reasons above enumerated, or on the ground that the original patent is not inoperative or invalid, or if so inoperative or invalid that the errors which rendered it so did not arise from inadvertence, accident, or mistake, may, upon payment of a fee of $10, appeal from the decision of the primary examiner to the examiners in chief. The appeal must set forth in writing the points of the decision upon which it is taken, and must be signed by the applicant or his duly authorized attorney or agent.

134. There must have been two rejections of the claims as originally filed, or, if amended in matter of substance, of the amended claims, and all the claims must have been passed upon, and except in cases of division all preliminary and intermediate questions relating to matters not affecting the merits of the invention settled, before the case can be appealed to the examiners in chief.

135. Upon the filing of the appeal the same shall be submitted to the primary examiner, who, if he find it to be regular in form, and to relate to an appealable action, shall, within five days from the filing thereof, furnish the examiners in chief with a written statement of the grounds of his decision on all the points involved in the appeal, with copies of the rejected claims and with references applicable thereto. The examiner shall at the time of making such statement furnish a copy of the same to the appellant. If the primary examiner shall decide that the appeal is not regular in form or does not relate to an appealable action, a petition from such decision may be taken directly to the commissioner, as provided in rule 145.

136. The appellant shall, before the day of hearing, file a brief of the authorities and arguments on which he will rely to maintain his appeal.

137. If the appellant desire to be heard orally before the examiners in chief, he will so indicate when he files his appeal; a day of hearing will then be fixed, and due notice of the same given him.

138. In contested cases the appellant shall have the right to make the opening and closing arguments, unless it shall be otherwise ordered by the tribunal having jurisdiction of the case.

139. (*a*) The examiners in chief in their decision will affirm or reverse the decision of the primary examiner only on the points on which appeal shall have been taken. (See rule 133.) Should they discover any apparent grounds not involved in the appeal for granting or refusing letters patent in the form claimed, or any other form, they will annex to their decision a statement to that effect, with such recommendation as they shall deem proper.

(*b*) From an adverse judgment of the primary examiner on points embraced in the recommendation annexed to the decision, appeal may be taken on questions involving the merits to the board of examiners in chief and on other questions to the commissioner as in other cases.

(*c*) The commissioner may, when an appeal from the decision of the examiners in chief is taken to him, remand the case to the primary examiner, either before or after final judgment, for consideration of any amendment or action which may be based on the recommendation annexed to the decision of the examiners in chief.

(*d*) If the commissioner, in reviewing the decision of the examiners in chief, discovers any apparent grounds for granting or refusing letters patent not involved in the appeal, he will, before or after final judgment, and whenever in his opinion substantial justice shall require it, give reasonable notice thereof to the parties; and if any amendment or action based thereon be proposed, he will remand the case to the primary examiner for consideration.

(*e*) From the decisions of the primary examiner, in cases remanded as herein provided, appeal will lie to the board of examiners in chief, or directly to the commissioner, as in other cases.

140. From the adverse decision of the board of examiners in chief appeal may be taken to the commissioner in person, upon payment of the fee of $20 required by law.

141. Affidavits received after the case has been appealed will not be admitted without remanding the application to the primary examiner for reconsideration, but the appellate tribunals may in their discretion refuse to remand the case and proceed with the same without consideration of the affidavits.

142. Cases which have been heard and decided by the commissioner on appeal will not be reopened except by his order; cases which have been decided by the examiners in chief will not be reheard by them, when no longer pending before them, without the written authority of the commissioner; and cases which have been decided by either the commissioner or the examiners in chief will not be reopened by the primary examiner without like authority, and then only for the consideration of matters not already adjudicated upon, sufficient cause being shown. (See rule 68.)

143. Contested cases will be regarded as pending before a tribunal until the limit of appeal, which must be fixed, has expired, or until some action has been had which waives the appeal or carries into effect the decision from which appeal might have been taken.

Ex parte cases decided by an appellate tribunal will, after decision, be remanded at once to the primary examiner, subject to the applicant's right of appeal, for such action as will carry into effect the decision, or for such further action as the applicant is entitled to demand.

144. Cases which have been deliberately decided by one commissioner will not be reconsidered by his successor except in accordance with the principles which govern the granting of new trials.

145. Upon receiving a petition stating concisely and clearly any proper question which has been twice acted upon by the examiner, and which does not involve the

merits of the invention claimed, the rejection of a claim or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the commissioner, and directing the examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The examiner shall at the time of making such statement furnish a copy thereof to the petitioner. No fee is required for such a petition.

146. In interference cases parties have the same remedy by appeal to the examiners in chief, to the commissioner, and to the Court of Appeals of the District of Columbia as in ex parte cases.

147. Appeals in interference cases must be accompanied by brief statements of the reasons therefor. Parties will be required to file six copies of printed briefs of their arguments, the appellant five days before the hearing and the appellee one day.

148. From the adverse decision of the commissioner upon the claims of an application and in interference cases, an appeal may be taken to the Court of Appeals of the District of Columbia in the manner prescribed by the rules of that court.

149. When an appeal is taken to the Court of Appeals of the District of Columbia, the appellant will give notice thereof to the commissioner, and file in the Patent Office, within 40 days, exclusive of Sundays and holidays, but including Saturday half holidays, from the date of the decision appealed from, his reasons of appeal specifically set forth in writing.

150. Pro forma proceedings will not be had in the Patent Office for the purpose of securing to applicants an appeal to the Court of Appeals of the District of Columbia.

HEARINGS AND INTERVIEWS.

151. Hearings will be had by the commissioner at 10 o'clock a. m., and by the board of examiners in chief at 1 o'clock p. m., and by the examiner of interferences upon interlocutory matters at 10 o'clock a. m., and upon final hearings at 11 o'clock a. m., on the day appointed unless some other hour be specifically designated. If either party in a contested case, or the appellant in an ex parte case, appears at the proper time, he will be heard. After the day of hearing, a contested case will not be taken up for oral argument except by consent of all parties. If the engagements of the tribunal having jurisdiction are such as to prevent the case from being taken up on the day of hearing, a new assignment will be made, or the case will be continued from day to day until heard. Unless it shall be otherwise ordered before the hearing begins, oral arguments will be limited to one hour for each party in contested cases, and to one-half hour in other cases. After a contested case has been argued, nothing further relating thereto will be heard unless upon request of the tribunal having jurisdiction of the case; and all interviews for this purpose with parties in interest or their attorneys will be invariably denied.

152. Interviews with examiners concerning applications and other matters pending before the office must be had in the examiners' rooms at such times, within office hours, as the respective examiners may designate; in the absence of the primary examiners, with the assistant in charge. Interviews will not be permitted at any other time or place without the written authority of the commissioner. Interviews for the discussion of pending applications will not be had prior to the first official action thereon.

MOTIONS.

153. In contested cases reasonable notice of all motions, and copies of motion papers and affidavits, must be served, as provided in rule 154 (2). Proof of such service must be made before the motion will be entertained by the office. Motions will not be heard in the absence of either party except upon default after due notice. Motions will be heard in the first instance by the officer or tribunal before whom the particular case may be pending. In original hearings on motions the moving parties shall have the

right to make the opening and closing arguments. In contested cases the practice on points to which the rules shall not be applicable will conform, as near as possible, to that of the United States courts in equity proceedings.

154. The following rules have been established for taking and transmitting testimony in interferences and other contested cases:

(1) Before the depositions of witnesses are taken by either party due notice shall be given to the opposing party, as hereinafter provided, of the time when and place where the depositions will be taken, of the cause or matter in which they are to be used, and of the names and residences of the witnesses to be examined, and the opposing party shall have full opportunity, either in person or by attorney, to cross-examine the witnesses. If the opposing party shall attend the examination of witnesses not named in the notice, and shall either cross-examine such witnesses or fail to object to their examination, he shall be deemed to have waived his right to object to such examination for want of notice. Neither party shall take testimony in more than one place at the same time, nor so nearly at the same time that reasonable opportunity for travel from one place of examination to the other can not be had.

(2) The notice for taking testimony or for motions must be served (unless otherwise stipulated in an instrument in writing filed in the case) upon the attorney of record, if there be one, or, if there be no attorney of record, upon the adverse party. Reasonable time must be given therein for such adverse party to reach the place of examination. Service of such notice may be made in either of the following ways: (1) By delivering a copy of the notice to the adverse party or his attorney; (2) by leaving a copy at the usual place of business of the adverse party or his attorney with some one in his employment; (3) when such adverse party or his attorney has no usual place of business, by leaving a copy at his residence, with a member of his family over 14 years of age and of discretion; (4) transmission by registered letter; (5) by express. Whenever it shall be satisfactorily shown to the commissioner that neither of the above modes of obtaining or reserving notice is practicable, the notice may be published in the Official Gazette. Such notice shall, with sworn proof of the fact, time, and mode of service thereof, be attached to the deposition or depositions whether the opposing party shall have cross-examined or not.

(3) Each witness before testifying shall be duly sworn according to law by the officer before whom his deposition shall be taken. The deposition shall be carefully read over by the witness, or by the officer to him, and shall then be subscribed by the witness in the presence of the officer. The officer shall annex to the deposition his certificate showing (1) the due administration of the oath by the officer to the witness before the commencement of his testimony; (2) the name of the person by whom the testimony was written out, and the fact that, if not written by the officer, it was written in his presence; (3) the presence or absence of the adverse party; (4) the place, day, and hour of commencing and taking the deposition; (5) the reading by, or to, each witness of his deposition before he signs the same; and (6) the fact that the officer was not connected by blood or marriage with either of the parties, nor interested, directly or indirectly, in the matter in controversy. The officer shall sign the certificate and affix thereto his seal of office, if he have such seal. He shall then, without delay, securely seal up all the evidence, notices, and paper exhibits, inscribe upon the envelope a certificate giving the title of the case, the name of each witness, and the date of sealing, address the package, and forward the same to the Commissioner of Patents. If the weight or bulk of an exhibit shall exclude it from the envelope, it shall be authenticated by the officer and transmitted in a separate package, marked and addressed as above provided.

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(4) If a party shall be unable to take any testimony within the time limited, and desires an extension for such purpose, he must file a motion, accompanied by a statement under oath setting forth specifically the reason why such testimony has not

been taken, and distinctly averring that such motion is made in good faith, and not for the purpose of delay. If either party shall be unable to procure the testimony of a witness or witnesses within the time limited, and desires an extension for such purpose, he must file a motion, accompanied by a statement under oath setting forth the cause of such inability, the name or names of such witness or witnesses, the facts expected to be proved by such witness or witnesses, the steps which have been taken to procure such testimony, and the dates on which efforts have been made to procure it. (See rule 153.)

(5) When a party relies upon a caveat to establish the date of his invention, the caveat itself, or a certified copy thereof, must be filed in evidence, with due notice to the opposite party.

(6) Upon notice given to the opposite party before the closing of the testimony, any official record, and any special matter contained in a printed publication, if competent evidence and pertinent to the issue, may be used as evidence at the hearing.

(7) All depositions which are taken must be duly filed in the Patent Office. On refusal to file, the office at its discretion will not further hear or consider the contestant with whom the refusal lies; and the office may, at its discretion, receive and consider a copy of the withheld deposition, attested by such evidence as is procurable.

155. The pages of each deposition must be numbered consecutively, and the name of the witness plainly and conspicuously written at the top of each page. The testimony must be written upon legal cap or foolscap paper, with a wide margin on the left-hand side of the page, and with the writing on one side only of the sheet.

156. The testimony will be taken in answer to interrogatories, with the questions and answers committed to writing in their regular order by the officer, or, in his presence, by some person not interested in the case, either as a party thereto or as attorney. But with the written consent of the parties the testimony may be taken stenographically, and the deposition may be written out by other persons in the presence of the officer.

Where testimony is taken stenographically, a longhand or typewritten copy shall be read to the witness, or read over by him, as soon as it can be made, and shall be signed by him as provided in paragraph 3 of rule 154. No officer who is connected by blood or marriage with either of the parties, or interested, directly or indirectly, in the matter in controversy, either as counsel, attorney, agent, or otherwise, is competent to take depositions, unless with the written consent of all the parties.

157. Upon motion duly made and granted (see rule 153) testimony taken in an interference proceeding may be used in any other or subsequent interference proceeding, so far as relevant and material, subject, however, to the right of any contesting party to recall witnesses whose depositions have been taken, and to take other testimony in rebuttal of the depositions.

158. Upon motion duly made and granted (see rule 153) testimony may be taken in foreign countries, upon complying with the following requirements:

(1) The motion must designate a place for the examination of the witnesses at which an officer duly qualified to take testimony under the laws of the United States in a foreign country shall reside, and it must be accompanied by a statement under oath that the motion is made in good faith, and not for purposes of delay or of vexing or harassing any party to the case; it must also set forth the names of the witnesses, the particular facts to which it is expected each will testify, and the grounds on which is based the belief that each will so testify.

(2) It must appear that the testimony desired is material and competent, and that it can not be taken in this country at all, or can not be taken here without hardship and injury to the moving party greatly exceeding that to which the opposite party will be exposed by the taking of such testimony abroad.

(3) Upon the granting of such motion, a time will be set within which the moving party shall file in duplicate the interrogatories to be propounded to each witness,

and serve a copy of the same upon each adverse party, who may, within a designated time, file, in duplicate, cross-interrogatories. Objections to any of the interrogatories or cross-interrogatories may be filed at any time before the depositions are taken, and such objections will be considered and determined upon the hearing of the case.

(4) As soon as the interrogatories and cross-interrogatories are decided to be in proper form, the commissioner will cause them to be forwarded to the proper officer, with the request that, upon payment of, or satisfactory security for, his official fees, he notify the witnesses named to appear before him within a designated time and make answer thereto under oath; and that he reduce their answers to writing, and transmit the same, under his official seal and signature, to the Commissioner of Patents, with the certificate prescribed in rule 154 (3).

(5) By stipulation of the parties the requirements of paragraph 3 as to written interrogatories and cross-interrogatories may be dispensed with, and the testimony may be taken before the proper officer upon oral interrogatories by the parties or their agents.

(6) Unless false swearing in the giving of such testimony before the officer taking it shall be punishable as perjury under the laws of the foreign State where it shall be taken, it will not stand on the same footing in the Patent Office as testimony duly taken in the United States; but its weight in each case will be determined by the tribunal having jurisdiction of such case.

159. Evidence touching the matter at issue will not be considered on the hearing which shall not have been taken and filed in compliance with these rules. But notice will not be taken of merely formal or technical objections which shall not appear to have wrought a substantial injury to the party raising them; and in case of such injury it must be made to appear that, as soon as the party became aware of the ground of objection, he gave notice thereof to the office, and also to the opposite party, informing him at the same time that, unless it should be removed, he (the objector) should urge his objection at the hearing. This rule is not to be so construed as to modify established rules of evidence, which will be applied strictly in all practice before the office.

160. The law requires the clerks of the various courts of the United States to issue subpœnas to secure the attendance of witnesses whose depositions are desired as evidence in contested cases in the Patent Office.

161. After testimony is filed in the office it may be inspected by any party to the case, but it can not be withdrawn for the purpose of printing. It may be printed by some one specially designated by the office for that purpose, under proper restrictions.

162. Thirty-one or more printed copies of the testimony must be furnished—5 for the use of the office, 1 for each of the opposing parties, and 25 for the Court of Appeals of the District of Columbia, should appeal be taken. If no appeal be taken, the 25 copies will be returned to the party filing them. The preliminary statement required by rule 110 must be printed as a part of the record. These copies of the record of the junior party's testimony must be filed not less than 40 days before the day of final hearing, and in the case of the senior party, not less than 20 days. They will be of the same size, both page and print, as the Rules of Practice, with the names of the witnesses at the top of the pages over their testimony, and will contain indexes with the names of all witnesses and reference to the pages where copies of papers and documents introduced as exhibits are shown.

When it shall appear, on motion duly made and by satisfactory proof, that a party, by reason of poverty, is unable to print his testimony, the printing may be dispensed with; but in such case typewritten copies must be furnished—one for the office and one for each adverse party. Printing of the testimony can not be dispensed with upon the stipulation of the parties.

163. Briefs in all contested cases shall be submitted in printed form, and shall be of the same size and the same as to page and print as the printed copies of testimony. But in case satisfactory reason therefor is shown to the office, typewritten briefs may be submitted. Briefs shall be filed three days before the hearing, except as provided

in rule 147. By consent of the parties they may be filed later, but in any case must be filed before the hearing. If either party fail to comply with this regulation, no extension of time will be granted for the purpose, except upon consent of the adverse parties.

ISSUE.

164. If, on examination, it shall appear that the applicant is justly entitled to a patent under the law, a notice of allowance will be sent him or his attorney, calling for the payment of the final fee within six months from the date of such notice of allowance, upon the receipt of which within the time fixed by law the patent will be prepared for issue. (See rules 206, 207.)

165. After notice of the allowance of an application is given, the case will not be withdrawn from issue except by approval of the commissioner, and if withdrawn for further action on the part of the office a new notice of allowance will be given. When the final fee has been paid upon an application for letters patent, and the case has received its date and number, it will not be withdrawn or suspended from issue on account of any mistake or change of purpose of the applicant or his attorney, nor for the purpose of enabling the inventor to procure a foreign patent, nor for any other reasons except mistake on the part of the office, or because of fraud, or illegality in the application, or for interference. (See rule 78.)

166. Whenever the commissioner shall direct the withdrawal of an application from issue on request of an applicant for reasons not prohibited by rule 165, such withdrawal shall not operate to stay the period of one year running against the application, which begins to attach from the date of the notice of allowance.

DATE, DURATION, AND FORM OF PATENTS.

167. Every patent will bear date as of a day not later than six months from the time the application was passed and allowed and notice thereof was mailed to the applicant or his attorney, if within that period the final fee be paid to the Commissioner of Patents, or if it be paid to the Treasurer or any of the assistant treasurers or designated depositaries of the United States, and the certificate promptly forwarded to the Commissioner of Patents; and if the final fee be not paid within that period, the patent will be withheld. (See rule 175.)

A patent will not be antedated.

168. Every patent will contain a short title of the invention or discovery indicating its nature and object, and a grant to the patentee, his heirs and assigns, for the term of 17 years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof. The duration of a design patent may be for the term of 3½, 7, or 14 years, as provided in rule 80. A copy of the specifications and drawings will be annexed to the patent and form part thereof.

DELIVERY.

169. The patent will be delivered or mailed on the day of its date to the attorney of record, if there be one; if not, to the patentee; or, if the attorney so request, to the patentee or assignee of an interest therein.

CORRECTION OF ERRORS IN LETTERS PATENT.

170. Whenever a mistake, incurred through the fault of the office, is clearly disclosed by the records or files of the office, a certificate, stating the fact and nature of such mistake, signed by the Commissioner of Patents, and sealed with the seal of the Patent Office, will, at the request of the patentee or his assignee, be indorsed without charge upon the letters patent, and recorded in the records of patents, and a printed copy thereof attached to each printed copy of the specification and drawing.

Whenever a mistake, incurred through the fault of the office, constitutes a sufficient legal ground for a reissue, such reissue will be made, for the correction of such mistake only, without charge of office fees, at the request of the patentee.

Mistakes not incurred through the fault of the office, and not affording legal grounds for reissues, will not be corrected after the delivery of the letters patent to the patentee or his agent.

Changes or corrections will not be made in letters patent after the delivery thereof to the patentee or his attorney, except as above provided.

ABANDONED, FORFEITED, REVIVED, AND RENEWED APPLICATIONS.

171. An abandoned application is one which has not been completed and prepared for examination within one year after the filing of the petition, or which the applicant has failed to prosecute within one year after any action therein of which notice has been duly given (see rules 31 and 77), or which the applicant has expressly abandoned by filing in the office a written declaration of abandonment, signed by himself and assignee, if any, identifying his application by title of invention, serial number, and date of filing. (See rule 60.)

Prosecution of an application to save it from abandonment must include such proper action as the condition of the case may require. The admission of an amendment not responsive to the last official action, or refusal to admit the same, and any proceedings relative thereto, shall not operate to save the application from abandonment under section 4894 of the Revised Statutes.

172. Before an application abandoned by failure to complete or prosecute can be revived as a pending application it must be shown to the satisfaction of the comsioner that the delay in the prosecution of the same was unavoidable.

173. When a new application is filed in place of an abandoned or rejected application, a new petition, specification, oath, drawing, and fee will be required; but the old model, if suitable, may be used.

174. A forfeited application is one upon which a patent has been withheld for failure to pay the final fee within the prescribed time. (See rule 167.)

175. When the patent has been withheld by reason of nonpayment of the final fee any person, whether inventor or assignee, who has an interest in the invention for which such patent was ordered to issue may file a renewal of the application for the same invention; but such second application must be made within two years after the allowance of the original application. Upon the hearing of such new application abandonment will be considered as a question of fact.

176. In such renewal the oath, petition, specification, drawing, and model of the original application may be used for the second application; but a new fee will be required. The second application will not be regarded for all purposes as a continuation of the original one, but must bear date from the time of renewal and be subject to examination like an original application.

177. Forfeited and abandoned applications will not be cited as references.

178. Notice of the filing of subsequent applications will not be given to applicants while their cases remain forfeited.

179. Copies of the files of forfeited and abandoned applications may be furnished when ordered by the commissioner. The requests for such copies must be presented in the form of a petition properly verified as to all matters not appearing of record in the Patent Office.

EXTENSIONS.

180. Patents can not be extended except by act of Congress.

DISCLAIMERS.

181. Whenever through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, a patentee has claimed as his invention or discovery more than he had a right to claim as new, his patent shall be valid for all that part which is truly and justly his own, provided the same is a material or substantial part of the thing patented; and any such patentee, his heirs or assigns, whether of the whole or any sectional interest therein, may, on payment of the fee required by law ($10), make disclaimer of such parts of the thing patented as he or they shall not choose to claim or to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent. Such disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office; and it shall thereafter be considered as part of the original specification to the extent of the interest possessed by the claimant and by those claiming under him after the record thereof. But no such disclaimer shall affect any action pending at the time of filing the same, except as to the question of unreasonable neglect or delay in filing it.

182. Such disclaimer must be distinguished from those which are embodied in original or reissue applications, as first filed or subsequently amended, referring to matter shown or described, but to which the disclaimant does not choose to claim title, and also from those made to avoid the continuance of an interference. Such disclaimers must be signed by the applicant in person and must be duly witnessed, and require no fee. (See rule 107.)

183–194. (Obsolete; law relating to caveats repealed by act of June 25, 1910, 36 Stat., 843.)

ASSIGNMENTS.

195. Every patent or any interest therein shall be assignable in law by an instrument in writing; and the patentee or his assigns or legal representatives may, in like manner, grant and convey an exclusive right under the patent to the whole or any specified part of the United States.

196. Interest in patents may be vested in assignees, in grantees of exclusive sectional rights, in mortgages, and in licenses.

(1) An assignee is a transferee of the whole interest of the original patent or of an undivided part of such whole interest, extending to every portion of the United States. The assignment must be written or printed and duly signed.

(2) A grantee acquires by the grant the exclusive right under the patent to make, use, and vend, and to grant to others the right to make, use, and vend, the thing patented within and throughout some specified part of the United States, excluding the patentee therefrom. The grant must be written or printed and be duly signed.

(3) A mortgage must be written or printed and be duly signed.

(4) A licensee takes an interest less then or different from either of the others. A license may be oral, written, or printed, and if written or printed must be duly signed.

197. An assignment, grant, or conveyance of a patent will be void as against any subsequent purchaser or mortgagee for a valuable consideration without notice unless recorded in the Patent Office within three months from the date thereof.

If any such assignment, grant, or conveyance of any patent shall be acknowledged before any notary public of the several States or Territories or the District of Columbia, or any commissioner of the United States circuit court, or before any secretary of legation or consular officer authorized to administer oaths or perform notarial acts under section 1750 of the Revised Statutes, the certificate of such acknowledgment, under the hand and official seal of such notary or other officer, shall be prima facie evidence of the execution of such assignment, or conveyance.

198. No instrument will be recorded which is not in the English language and which does not, in the judgment of the commissioner, amount to an assignment, grant,

mortgage, lien, encumbrance, or license, or which does not affect the title of the patent or invention to which it relates. Such instrument should identify the patent by date and number; or, if the invention be unpatented, the name of the inventor, the serial number, and date of the application should be stated.

199. Assignments which are made conditional on the performance of certain stipulations, as the payment of money if recorded in the office, are regarded as absolute assignments until canceled with the written consent of both parties or by the decree of a competent court. The office has no means for determining whether such conditions have been fulfilled.

200. In every case where it is desired that the patent shall issue to an assignee, the assignment must be recorded in the Patent Office at a date not later than the day on which the final fee is paid. (See rule 26.) The date of the record is the date of the receipt of the assignment at the office.

201. The receipt of assignments is generally acknowledged by the office. They are recorded in regular order as promptly as possible, and then transmitted to the persons entitled to them.

OFFICE FEES.

202. Nearly all the fees payable to the Patent Office are positively required by law to be paid in advance—that is, upon making application for any action by the office for which a fee is payable. For the sake of uniformity and convenience, the remaining fees will be required to be paid in the same manner.

203. The following is the schedule of fees and of prices of publications of the Patent Office:

On filing each original application for a patent, except in design cases	$15.00
On issuing each original patent, except in design cases	20.00
In design cases:	
For 3 years and 6 months	10.00
For 7 years	15.00
For 14 years	30.00
On every application for the reissue of a patent	30.00
On filing each disclaimer	10.00
On an appeal for the first time from the primary examiner to the examiners in chief	10.00
On every appeal from the examiners in chief to the commissioner	20.00
For certified copies of patents if in print:	
For specification and drawing, per copy	.05
For the certificate	.25
For the grant	.50
For certifying to a duplicate of a model	.50
For manuscript copies of records, for every 100 words or fraction thereof	.10
If certified, for the certificate, additional	.25
For 20-coupon orders, each coupon good for one copy of a printed specification and drawing, and receivable in payment for prints, Official Gazette, and Roster of Attorneys	1.00
For 100 coupons in stub book	5.00
For uncertified copies of the specifications and accompanying drawings of patents, if in print, each	.05
For the drawings, if in print	.05
For copies of drawings not in print, the reasonable cost of making them.	
For photo prints of drawings, for each sheet of drawings:	
Size 10 by 15 inches, per copy	.25
Size 8 by 12½ inches, per copy	.15

For recording every assignment, agreement, power of attorney, or other paper, of 300 words or under	$1.00
Over 300 and under 1,000 words	2.00
For each additional 1,000 words or fraction thereof	1.00
For abstracts of title to patents or inventions:	
For the search, one hour or less, and certificate	1.00
Each additional hour or fraction thereof	.50
For each brief from the digest of assignments, of 200 words or less	.20
Each additional 100 words or fraction thereof	.10
For searching titles or records, one hour or less	.50
Each additional hour or fraction thereof	.50
For assistance to attorneys in the examination of publications in the scientific library, one hour or less	1.00
Each additional hour or fraction thereof	1.00
For copies of matter in any foreign language, for every 100 words or a fraction thereof	.10
For translation, for every 100 words or fraction thereof	.50

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204. An order for a copy of an assignment must give the liber and page of the record, as well as the name of the inventor; otherwise an extra charge will be made for the time consumed in making any search for such assignment.

205. Persons will not be allowed to make copies or tracings from the files or records of the office. Such copies will be furnished, when ordered, at the rates already specified.

206. All payments of money required for office fees must be made in specie, Treasury notes, national-bank notes, certificates of deposit, post-office money orders, or certified checks. Money orders and checks should be made payable to the "Commissioner of Patents." Payment may also be made to the Treasurer, or to any of the assistant treasurers of the United States, or to any of the depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit therefor. This receipt or certificate of deposit must be filed in the Patent Office within 10 days after the money is paid. Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered. In no case should money be sent with models.

207. The weekly issue closes on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter. If the final fee in any application is not paid on or before Thursday, the patent will not go to issue until the following week.

REPAYMENT OF MONEY.

208. Money paid by actual mistake, such as a payment in excess, or when not required by law, or by neglect or misinformation on the part of the office, will be refunded; but a mere change of purpose after the payment of money, as when a party desires to withdraw his application for a patent or for the registration of a trade-mark, or to withdraw an appeal, will not entitle a party to demand such a return.

PUBLICATIONS.

209. The Official Gazette, a weekly publication which has been issued since 1872, takes the place of the old Patent Office Report. It contains the claims of all patents issued, including reissues, with portions of the drawings selected to illustrate the inventions claimed. It also contains decisions rendered by the courts in patent cases and by the Commissioner of Patents, and other special matters of interest to inventors.

The Gazette is furnished to subscribers at the rate of $5 per annum. When sent abroad, an additional charge is made for the payment of postage. (See rule 203.) Representatives and Senators are each entitled to a copy, and each is entitled to designate eight public libraries to which the Gazette will be sent without charge. Single copies are furnished for 10 cents each.

An index is published annually, which is sent to all subscribers and designated libraries without additional cost.

Printed volumes are issued monthly, containing the entire specifications and drawings of all patents issued during the previous month. These are authenticated by the seal of the office, and may be used as evidence throughout the United States. One copy is deposited in the Library of Congress and in each State and Territorial library, and one copy in the custody of the clerk of each United States district court, for general reference.

LIBRARY REGULATIONS.

210. Officers of the bureau and members of the examining corps only are allowed to enter the alcoves or take books from the scientific library.

Books taken from this library must be entered in a register kept for the purpose and returned on the call of the librarian. They must not be taken from the building except by permission of the commissioner.

Any book lost or defaced must be replaced by a new copy.

Patentees and others doing business with the office can examine the books only in the library hall.

Translations will be made only for official use.

Copies or tracings from works in the library will be furnished by the office at the usual rates.

AMENDMENTS OF THE RULES.

211. All amendments of the foregoing rules will be published in the Official Gazette.

QUESTIONS NOT SPECIFICALLY PROVIDED FOR.

212. All cases not specifically defined and provided for in these rules will be decided in accordance with the merits of each case under the authority of the commissioner, and such decision will be communicated to the interested parties in writing.

APPEALS FROM THE COMMISSIONER OF PATENTS TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

COURT RULES.

No. XXI.—*Appeals from the Commissioner of Patents.*

1. All certified copies of papers and evidence on appeal from the decision of the Commissioner of Patents, authorized by section 9 of the act of Congress approved February 9, 1893, shall be received by the clerk of this court; and the cases, by titling and number as they appear on the record in the Patent Office, shall be placed on a separate docket from the docket of the cases brought into this court by appeal from the Supreme Court of the District of Columbia, to be designated as the "Patent appeal docket"; and upon filing such copies the party appellant shall deposit with the clerk or secure to be paid as demanded an amount of money sufficient to cover all legal costs and expenses of said appeal, and upon failure to do so his appeal shall be dismissed. The clerk shall, under this titling of the case on the docket, make brief entries of all papers filed and of all proceedings had in the case.

2. The appellant, upon complying with the preceding section of this rule, shall file in the case a petition addressed to the court, in which he shall briefly set forth and show that he has complied with the requirements of sections 4912 and 4913 of

the Revised Statutes of the United States to entitle him to an appeal and praying that his appeal may be heard upon and for the reasons assigned therefor to the commissioner, and said appeal shall be taken within 40 days from the date of the ruling or order appealed from and not afterwards.

If the petition for an appeal and the certified copies of papers and evidence on appeal mentioned in this and the preceding section of this rule shall not be filed and the case duly docketed in this court within 40 days (exclusive of Sundays and legal holidays) from the day upon which notice of appeal is given to the Commissioner of Patents, the commissioner, upon such facts being brought to his attention by motion of the appellee, duly served upon the appellant or his attorney, may take such further proceedings in the case as may be necessary to dispose of the same, as though no notice of appeal had ever been given.

3. The clerk shall provide a minute book of his office, in which he shall record every order, rule, judgment, or decree of the court in each case, in the order of time in which said proceedings shall occur; and of this book the index shall be so kept as to show the name of the party applying for the patent, the invention by subject matter or name, and, in the case of interference, the name of the party with whose pending application or unexpired patent the subsequent application is supposed to interfere.

4. The cases on this docket shall be called for argument on the second Tuesday of January, March, May, and November in each year, and the cases shall be called in regular order as they may stand on the docket. A copy of these rules shall be furnished to the Commissioner of Patents, and it shall be the duty of the clerk of this court to give special notice to the said commissioner at least 15 days immediately preceding the times thus respectively fixed for the hearing of said cases; the said notice to name the place of the sitting of the court, the titling of the cases on the docket of this court, the respective numbers thereof, and the number of each case as it appears of record in the Patent Office; and thereupon the commissioner shall give notice to the parties interested or concerned by notice addressed to them severally by mail.

5. The clerk shall furnish to any applicant a copy of any paper in any of said appeals on payment of the legal fees therefor.

6. The appeals from the Commissioner of Patents shall be subject to all the rules of this court provided for other cases therein, except where such rules, from the nature of the case or by reason of special provisions inconsistent therewith, are not applicable.

7. Models, diagrams, and exhibits of material forming part of the evidence taken in the court below or in the Patent Office in any case pending in this court on writ of error or appeal shall be placed in the custody of the clerk of this court at least three days before the case is heard or submitted.

8. All models, diagrams, and exhibits of material placed in the custody of the clerk for the inspection of the court on the hearing of the case must be taken away by the parties within 20 days after the case is decided. When this is not done, it shall be the duty of the clerk to notify the counsel in the case and the Commissioner of Patents, by mail or otherwise, of the requirements of this rule; and if the articles are not removed within 10 days after the notice is given, he shall destroy them or make such other disposition of them as to him may seem best.

No. XXII.—*Opinions of lower court and Commissioner of Patents made part of record.*

Whenever the judgment, decree, or order appealed from is based upon or has reference to a written opinion filed in the case by the court below, such opinion shall constitute a part of the transcript to be sent to this court; and such opinion, and also the written reasons or grounds assigned by the Commissioner of Patents in appeals from the Patent Office, shall be printed as part of the record to be printed under rule 6.

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No. XXVII.—*Sundays and legal holidays.*

That wherever days are mentioned in the foregoing rules as limitations of time, they shall be construed to exclude Sundays and legal holidays, but to include Saturday half holidays.

INSTRUCTIONS TO APPELLANTS.

The act of Congress creating the Court of Appeals of the District of Columbia, approved February 9, 1893, gives to that court jurisdiction of appeals from final decisions of the Commissioner of Patents both in ex parte cases and in interference cases.

Where an appeal of either class is to be prosecuted to the Court of Appeals of the District of Columbia, the first step is to file with the Commissioner of Patents a notice of appeal, together with an assignment of reasons of appeal. This step must be taken within 40 days, exclusive of Sundays and legal holidays, but including Saturday half holidays, from the date of the decision of the Commissioner of Patents sought to be reviewed.

The next step in the prosecution of such an appeal is to file with the clerk of the court of appeals of the District of Columbia a certified transcript of the record and proceedings in the Patent Office relating to the case in question, together with a petition for appeal, addressed to the Court of Appeals of the District of Columbia, make a deposit of $15, and have the appearance of a member of the bar of that court entered for the appellant.

The notice of appeal and reasons of appeal required to be served upon the Commissioner of Patents may be signed by the appellant or by his attorney of record in the Patent Office, but the petition for an appeal that is filed in the Court of Appeals of the District of Columbia must be signed by a member of the bar of the Court of Appeals of the District of Columbia, who should enter a regular appearance in the case in the clerk's office.

After the petition for the appeal, the certified transcript, and the docket fee of $15 have been lodged in the office of the clerk of the Court of Appeals of the District of Columbia, the clerk will send to the solicitor of record an estimate of the cost of printing the petition, transcript, etc.

When the amount called for is deposited, the clerk will cause the printing to be done under his supervision, and when the printing is completed the case will be put on the calendar for hearing at the next term at which patent appeals are heard.

In interference cases the clerk is authorized to receive printed copies of the evidence, such as have been used in the Patent Office, thus saving to the appellant the cost of reprinting such evidence. When such printed copies are supplied, 25 copies must be furnished.

As above stated, the notice of appeal and the reasons of appeal are required to be filed with the Commissioner of Patents within 40 days, exclusive of Sundays and legal holidays, but including Saturday half holidays, of the date of the decision appealed from, but the petition for appeal and the certified transcript which are to be filed in the Court of Appeals of the District of Columbia are required to be filed in that court within 40 days, exclusive of Sundays and legal holidays, but including Saturday half holidays, from the time of the giving of the notice of appeal; that is to say, if the decision complained of was rendered, for instance, on the 1st day of July, 1906, the party aggrieved might file his notice of appeal, with the reasons of appeal, at any time within 40 days, exclusive of Sundays and legal holidays, but including Saturday half holidays, thereafter; but if he filed his notice of appeal and reasons therefor on the 10th day of July, 1906, he would be required to file his petition for appeal and the certified transcript in the Court of Appeals of the District of Columbia within 40 days, exclusive of Sundays and legal holidays, but including Saturday half holidays, of the 10th day of July, 1906.

III. Trade-Mark Laws.

[Act of Feb. 20, 1905 (33 Stat., 724).]

That the owner of a trade-mark used in commerce with foreign nations, or among the several States, or with Indian tribes, provided such owner shall be domiciled within the territory of the United States, or resides in or is located in any foreign country which, by treaty, convention, or law, affords similar privileges to the citizens of the United States, may obtain registration for such trade-mark by complying with the following requirements: First, by filing in the Patent Office an application therefor, in writing, addressed to the Commissioner of Patents, signed by the applicant, specifying his name, domicile, location, and citizenship; the class of merchandise and the particular description of goods comprised in such class to which the trade-mark is appropriated; a statement of the mode in which the same is applied and affixed to goods, and the length of time during which the trade-mark has been used; a description of the trade-mark itself shall be included, if desired by the applicant or required by the commissioner, provided such description is of a character to meet the approval of the commissioner. With this statement shall be filed a drawing of the trade-mark, signed by the applicant, or his attorney, and such number of specimens of the trade-mark as actually used as may be required by the Commissioner of Patents. Second, by paying into the Treasury of the United States the sum of ten dollars, and otherwise complying with the requirements of this act and such regulations as may be prescribed by the Commissioner of Patents. [As amended by act of Feb. 18, 1909, 35 Stat., 627.]

Sec. 2. That the application prescribed in the foregoing section, in order to create any right whatever in favor of the party filing it, must be accompanied by a written declaration verified by the applicant, or by a member of the firm or an officer of the corporation or association applying, to the effect that the applicant believes himself or the firm, corporation, or association in whose behalf he makes the application to be the owner of the trade-mark sought to be registered, and that no other person, firm, corporation, or association, to the best of the applicant's knowledge and belief, has the right to use such trade-mark in the United States, either in the identical form or in such near resemblance thereto as might be calculated to deceive; that such trade-mark is used in commerce among the several States, or with foreign nations or with Indian tribes, and that the description and drawing presented truly represent the trade-mark sought to be registered. If the applicant resides or is located in a foreign country, the statement required shall, in addition to the foregoing, set forth that the trade-mark has been registered by the applicant, or that an application for the registration thereof has been filed by him in the foreign country in which he resides or is located, and shall give the date of such registration, or the application therefor, as the case may be, except that in the application in such cases it shall not be necessary to state that the mark has been used in commerce with the United States or among the States thereof. The verification required by this section may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States, or before any notary public, judge, or magistrate having an official seal and authorized to administer oaths in the foreign country in which the applicant may be whose authority shall be proved by a certificate of a diplomatic or consular officer of the United States. [As amended by act of Feb. 18, 1909, 35 Stat., 627.]

Sec. 3. That every applicant for registration of a trade-mark, or for renewal of registration of a trade-mark, who is not domiciled within the United States, shall, before the issuance of the certificate of registration, as hereinafter provided for, designate, by a notice in writing, filed in the Patent Office, some person residing

within the United States on whom process or notice of proceedings affecting the right of ownership of the trade-mark of which such applicant may claim to be the owner, brought under the provisions of this act or under other laws of the United States, may be served with the same force and effect as if served upon the applicant or registrant in person. For the purposes of this act it shall be deemed sufficient to serve such notice upon such applicant, registrant, or representative by leaving a copy of such process or notice addressed to him at the last address of which the Commissioner of Patents has been notified.

SEC. 4. That an application for registration of a trade-mark filed in this country by any person who has previously regularly filed in any foreign country which, by treaty, convention, or law, affords similar privileges to citizens of the United States an application for registration of the same trade-mark shall be accorded the same force and effect as would be accorded to the same application if filed in this country on the date on which application for registration of the same trade-mark was first filed in such foreign country: *Provided*, That such application is filed in this country within four months from the date on which the application was first filed in such foreign country: *And provided*, That certificate of registration shall not be issued for any mark for registration of which application has been filed by an applicant located in a foreign country until such mark has been actually registered by the applicant in the country in which he is located.

SEC. 5. That no mark by which the goods of the owner of the mark may be distinguished from other goods of the same class shall be refused registration as a trade-mark on account of the nature of such mark unless such mark—

(*a*) Consists of or comprises immoral or scandalous matter.

(*b*) Consists of or comprises the flag or coat of arms or other insignia of the United States, or any simulation thereof, or of any State, or municipality, or of any foreign nation, or of any design or picture that has been or may hereafter be adopted by any fraternal society as its emblem: *Provided*, That trade-marks which are identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resemble a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers, shall not be registered: *Provided*, That no mark which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term, shall be registered under the terms of this act: *Provided further*, That no portrait of a living individual may be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing: *And provided further*, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding February twentieth, nineteen hundred and five: *Provided further*, That nothing herein shall prevent the registration of a trade-mark otherwise registrable because of its being the name of the applicant or a portion thereof. [As amended by act of Mar. 2, 1907, 34 Stat., 1251; and act of Feb. 18, 1911, 36 Stat., 919.]

SEC. 6. That on the filing of an application for registration of a trade-mark which complies with the requirements of this act, and the payment of the fees herein provided for, the Commissioner of Patents shall cause an examination thereof to be made; and if on such examination it shall appear that the applicant is entitled to

have his trade-mark registered under the provisions of this act, the commissioner shall cause the mark to be published at least once in the Official Gazette of the Patent Office. Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. An opposition may be filed by a duly authorized attorney, but such opposition shall be null and void unless verified by the opposer within a reasonable time after such filing. If no notice of opposition is filed within said time, the commissioner shall issue a certificate of registration therefor, as hereinafter provided for. If on examination an application is refused, the commissioner shall notify the applicant, giving him his reasons therefor. [As amended by act of Mar. 2, 1907, 34 Stat., 1252.]

SEC. 7. That in all cases where notice of opposition has been filed the Commissioner of Patents shall notify the applicant thereof and the grounds therefor.

Whenever application is made for the registration of a trade-mark which is substantially identical with a trade-mark appropriated to goods of the same descriptive properties, for which a certificate of registration has been previously issued to another, or for registration of which another has previously made application, or which so nearly resembles such trade-mark, or a known trade-mark owned and used by another, as in the opinion of the commissioner, to be likely to be mistaken therefor by the public, he may declare that an interference exists as to such trade-mark, and in every case of interference or opposition to registration he shall direct the examiner in charge of interferences to determine the question of the right of registration to such trade-mark, and of the sufficiency of objections to registration, in such manner and upon such notice to those interested as the commissioner may by rules prescribe.

The commissioner may refuse to register the mark against the registration of which objection is filed, or may refuse to register both of two interfering marks, or may register the mark, as a trade-mark, for the person first to adopt and use the mark, if otherwise entitled to register the same, unless an appeal is taken, as hereinafter provided for, from his decision, by a party interested in the proceeding, within such time (not less than twenty days) as the commissioner may prescribe.

SEC. 8. That every applicant for the registration of a trade-mark, or for the renewal of the registration of a trade-mark, which application is refused, or a party to an interference against whom a decision has been rendered, or a party who has filed a notice of opposition as to a trade-mark, may appeal from the decision of the examiner in charge of trade-marks, or the examiner in charge of interferences, as the case may be, to the commissioner in person, having once paid the fee for such appeal.

SEC. 9. That if an applicant for registration of a trade-mark, or a party to an interference as to a trade-mark, or a party who has filed opposition to the registration of a trade-mark, or party to an application for the cancellation of the registration of a trade-mark, is dissatisfied with the decision of the Commissioner of Patents, he may appeal to the Court of Appeals of the District of Columbia on complying with the conditions required in case of an appeal from the decision of the commissioner by an applicant for patent, or a party to an interference as to an invention, and the same rules of practice and procedure shall govern in every stage of such proceedings, as far as the same may be applicable.

SEC. 10. That every registered trade-mark and every mark for the registration of which application has been made, together with the application for registration of the same, shall be assignable in connection with the good will of the business in which the mark is used. Such assignment must be by an instrument in writing and duly acknowledged according to the laws of the country or State in which the same is executed; any such assignment shall be void as against any subsequent purchaser for a valuable consideration, without notice, unless it is recorded in the Patent Office

within three months from date thereof. The commissioner shall keep a record of such assignments.

SEC. 11. That certificates of registration of trade-marks shall be issued in the name of the United States of America, under the seal of the Patent Office, and shall be signed by the Commissioner of Patents, and a record thereof, together with printed copies of the drawing and statement of the applicant, shall be kept in books for that purpose. The certificate shall state the date on which the application for registration was received in the Patent Office. Certificates of registration of trade-marks may be issued to the assignee of the applicant, but the assignment must first be entered of record in the Patent Office.

Written or printed copies of any records, books, papers, or drawings relating to trade-marks belonging to the Patent Office, and of certificates of registration, authenticated by the seal of the Patent Office and certified by the commissioner thereof, shall be evidence in all cases wherein the originals could be evidence; and any person making application therefor and paying the fee required by law shall have certified copies thereof.

SEC. 12. That a certificate of registration shall remain in force for twenty years, except that in the case of trade-marks previously registered in a foreign country such certificates shall cease to be in force on the day on which the trade-mark ceases to be protected in such foreign country, and shall in no case remain in force more than twenty years unless renewed. Certificates of registration may be from time to time renewed for like periods on payment of the renewal fees required by this act upon request by the registrant, his legal representatives, or transferees of record in the Patent Office, and such request may be made at any time not more than six months prior to the expiration of the period for which the certificates of registration were issued or renewed. Certificates of registration in force at the date at which this act takes effect shall remain in force for the period for which they were issued, but shall be renewable on the same conditions and for the same periods as certificates issued under the provisions of this act, and when so renewed shall have the same force and effect as certificates issued under this act.

SEC. 13. That whenever any person shall deem himself injured by the registration of a trade-mark in the Patent Office he may at any time apply to the Commissioner of Patents to cancel the registration thereof. The commissioner shall refer such application to the examiner in charge of interferences, who is empowered to hear and determine this question and who shall give notice thereof to the registrant. If it appear after a hearing before the examiner that the registrant was not entitled to the use of the mark at the date of his application for registration thereof, or that the mark is not used by the registrant, or has been abandoned, and the examiner shall so decide, the commissioner shall cancel the registration. Appeal may be taken to the commissioner in person from the decision of examiner of interferences.

SEC. 14. That the following shall be the rates for trade-mark fees:

On filing each original application for registration of a trade-mark, ten dollars: *Provided*, That an application for registration of a trade-mark pending at the date of the passage of this act, and on which certificate of registration shall not have issued at such date, may, at the option of the applicant, be proceeded with and registered under the provisions of this act without the payment of further fee.

On filing each application for renewal of the registration of a trade-mark, ten dollars.

On filing notice of opposition to the registration of a trade-mark, ten dollars.

On an appeal from the examiner in charge of trade-marks to the Commissioner of Patents, fifteen dollars.

On an appeal from the decision of the examiner in charge of interferences, awarding ownership of a trade-mark or canceling the registration of a trade-mark, to the Commissioner of Patents, fifteen dollars.

For certified and uncertified copies of certificates of registration and other papers, and for recording transfers and other papers, the same fees as required by law for such copies of patents and for recording assignments and other papers relating to patents.

SEC. 15. That sections forty-nine hundred and thirty-five and forty-nine hundred and thirty-six of the Revised Statutes, relating to the payment of patent fees and to the repayment of fees paid by mistake, are hereby made applicable to trade-mark fees.

SEC. 16. That the registration of a trade-mark under the provisions of this act shall be prima facie evidence of ownership. Any person who shall, without the consent of the owner thereof, reproduce, counterfeit, copy, or colorably imitate any such trade-mark and affix the same to merchandise of substantially the same descriptive properties as those set forth in the registration, or to labels, signs, prints, packages, wrappers, or receptacles intended to be used upon or in connection with the sale of merchandise of substantially the same descriptive properties as those set forth in such registration, and shall use, or shall have used, such reproduction, counterfeit, copy, or colorable imitation in commerce among the several States, or with a foreign nation, or with the Indian tribes, shall be liable to an action for damages therefor at the suit of the owner thereof; and whenever in any such action a verdict is rendered for the plaintiff the court may enter judgment therein for any sum above the amount found by the verdict as the actual damages, according to the circumstances of the case, not exceeding three times the amount of such verdict, together with the costs.

SEC. 17. That the circuit and Territorial courts of the United States and the Supreme Court of the District of Columbia shall have original jurisdiction, and the Circuit Courts of Appeal of the United States and the Court of Appeals of the District of Columbia shall have appellate jurisdiction of all suits at law or in equity respecting trade-marks registered in accordance with the provisions of this act, arising under the present act, without regard to the amount in controversy.

SEC. 18. That writs of certiorari may be granted by the Supreme Court of the United States for the review of cases arising under this act in the same manner as provided for patent cases by the act creating the Circuit Court of Appeals.

SEC. 19. That the several courts vested with jurisdiction of cases arising under the present act shall have power to grant injunctions, according to the course and principles of equity, to prevent the violation of any right of the owner of a trade-mark registered under this act, on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for wrongful use of a trade-mark the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction. The court shall have the same power to increase such damages in its discretion as is given by section sixteen of this act for increasing damages found by verdict in actions of law; and in assessing profits the plaintiff shall be required to prove defendant's sales only; defendant must prove all elements of cost which are claimed.

SEC. 20. That in any case involving the right to a trade-mark registered in accordance with the provisions of this act in which the verdict has been found for the plaintiff or an injunction issued, the court may order that all labels, signs, prints, packages, wrappers, or receptacles in the possession of the defendant bearing the trade-mark of the plaintiff or complainant, or any reproduction, counterfeit, copy, or colorable imitation thereof, shall be deliverd up and destroyed. Any injunction that may be granted upon hearing, after notice to the defendant, to prevent the violation of any right of the owner of a trade-mark registered in accordance with the provisions of this act by any circuit court of the United States, or by a judge thereof, may be served on the parties against whom such injunction may be granted anywhere in the United States where they may be found, and shall be operative, and may be enforced

by proceedings to punish for contempt or otherwise, by the court by which such injunction was granted, or by any other circuit court or judge thereof, in the United States, or by the Supreme Court of the District of Columbia or a judge thereof. The said courts, or judges thereof, shall have jurisdiction to enforce said injunction, as herein provided, as fully as if the injunction had been granted by the circuit court in which it is sought to be enforced. The clerk of the court or judge granting the injunction shall, when required to do so by the court before which application to enforce said injunction is made, transfer without delay to said court a certified copy of all the papers on which the said injunction was granted that are on file in his office.

SEC. 21. That no action or suit shall be maintained under the provisions of this act in any case when the trade-mark is used in unlawful business, or upon any article injurious in itself, or which mark has been used with the design of deceiving the public in the purchase of merchandise, or has been abandoned, or upon any certificate of registration fraudulently obtained.

SEC. 22. That whenever there are interfering registered trade-marks, any person interested in any one of them may have relief against the interfering registrant, and all persons interested under him, by suit in equity against the said registrant; and the court, on notice to adverse parties and other due proceedings had according to the course of equity, may adjudge and declare either of the registrations void in whole or in part according to the interest of the parties in the trade-mark, and may order the certificate of registration to be delivered up to the Commissioner of Patents for cancellation.

SEC. 23. That nothing in this act shall prevent, lessen, impeach, or avoid any remedy at law or in equity which any party aggrieved by any wrongful use of any trade-mark might have had if the provisions of this act had not been passed.

SEC. 24. That all applications for registration pending in the office of the Commissioner of Patents at the time of the passage of this act may be amended with a view to bringing them, and the certificate issued upon such applications, under its provisions, and the prosecution of such applications may be proceeded with under the provisions of this act.

SEC. 25. That any person who shall procure registration of a trade-mark, or entry thereof, in the office of the Commissioner of Patents by a false or fraudulent declaration or representation, oral or in writing, or by any false means, shall be liable to pay any damages sustained in consequence thereof to the injured party, to be recovered by an action on the case.

SEC. 26. That the Commissioner of Patents is authorized to make rules and regulations, not inconsistent with law, for the conduct of proceedings in reference to the registration of trade-marks provided for by this act.

SEC. 27. That no article of imported merchandise which shall copy or simulate the name of any domestic manufacture, or manufacturer or trader, or of any manufacturer or trader located in any foreign country which, by treaty, convention, or law affords similar privileges to citizens of the United States, or which shall copy or simulate a trade-mark registered in accordance with the provisions of this act or shall bear a name or mark calculated to induce the public to believe that the article is manufactured in the United States, or that it is manufactured in any foreign country or locality other than the country or locality in which it is in fact manufactured, shall be admitted to entry at any customhouse of the United States; and, in order to aid the officers of the customs in enforcing this prohibition, any domestic manufacturer or trader, and any foreign manufacturer or trader, who is entitled under the provisions of a treaty, convention, declaration, or agreement between the United States and any foreign country to the advantages afforded by law to citizens of the United States in respect to trade-marks and commercial names, may require his name and residence, and the name of the locality in which his goods are manufactured, and a copy of the certificate of registration of his trade-mark, issued in accordance with the

provisions of this act, to be recorded in books which shall be kept for this purpose in the Department of the Treasury, under such regulations as the Secretary of the Treasury shall prescribe, and may furnish to the department facsimiles of his name, the name of the locality in which his goods are manufactured, or of his registered trade-mark; and thereupon the Secretary of the Treasury shall cause one or more copies of the same to be transmitted to each collector or other proper officer of customs.

SEC. 28. That it shall be the duty of the registrant to give notice to the public that a trade-mark is registered, either by affixing thereon the words "Registered in U. S. Patent Office," or abbreviated thus, "Reg. U. S. Pat. Off.," or when, from the character or size of the trade-mark, or from its manner of attachment to the article to which it is appropriated, this can not be done, then by affixing a label containing a like notice to the package or receptacle wherein the article or articles are inclosed; and in any suit for infringement by a party failing so to give notice of registration no damages shall be recovered, except on proof that the defendant was duly notified of infringement and continued the same after such notice.

SEC. 29. That in construing this act the following rules must be observed, except where the contrary intent is plainly apparent from the context thereof: The United States includes and embraces all territory which is under the jurisdiction and control of the United States. The word "States" includes and embraces the District of Columbia, the Territories of the United States, and such other territory as shall be under the jurisdiction and control of the United States. The terms "person" and "owner," and any other word or term used to designate the applicant or other entitled to a benefit or privilege or rendered liable under the provisions of this act, include a firm, corporation, or association as well as a natural person. The term "applicant" and "registrant" embrace the successors and assigns of such applicant or registrant. The term "trade-mark" includes any mark which is entitled to registration under the terms of this act, and whether registered or not, and a trade-mark shall be deemed to be "affixed" to an article when it is placed in any manner in or upon either the article itself or the receptacle or package or upon the envelope or other thing in, by, or with which the goods are packed or inclosed or otherwise prepared for sale or distribution.

SEC. 30. That this act shall be in force and take effect April first, nineteen hundred and five. All acts and parts of acts inconsistent with this act are hereby repealed except so far as the same may apply to certificates of registration issued under the act of Congress approved March third, eighteen hundred and eighty-one, entitled "An act to authorize the registration of trade-marks and protect the same," or under the act approved August fifth, eighteen hundred and eighty-two, entitled "An act relating to the registration of trade-marks."

[Act of May 4, 1906 (34 Stat., 169).]

SEC. 2. That the Commissioner of Patents shall establish classes of merchandise for the purpose of trade-mark registration, and shall determine the particular descriptions of goods comprised in each class. On a single application for registration of a trade-mark the trade-mark may be registered at the option of the applicant for any or all goods upon which the mark has actually been used comprised in a single class of merchandise, provided the particular descriptions of goods be stated.

SEC. 3. That any owner of a trade-mark who shall have a manufacturing establishment within the territory of the United States shall be accorded, so far as the registration and protection of trade-marks used on the products of such establishment are concerned, the same rights and privileges that are accorded to owners of trade-marks domiciled within the territory of the United States by the act entitled "An act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same," approved February twentieth, nineteen hundred and five.

SEC. 4. That this act shall take effect July first, nineteen hundred and six.

[Act of Jan. 5, 1905 (33 Stat., 600).]

SEC. 4. That from and after the passage of this act it shall be unlawful for any person within the jurisdiction of the United States to falsely or fraudulently hold himself out as or represent or pretend himself to be a member of or an agent for the American National Red Cross for the purpose of soliciting, collecting, or receiving money or material; or for any person to wear or display the sign of the Red Cross or any insignia colored in imitation thereof for the fraudulent purpose of inducing the belief that he is a member of or an agent for the American National Red Cross. It shall be unlawful for any person, corporation, or association other than the American National Red Cross and its duly authorized employees and agents and the Army and Navy sanitary and hospital authorities of the United States, for the purpose of trade or as an advertisement, to induce the sale of any article whatsoever or for any business or charitable purpose to use within the territory of the United States of America and its exterior possessions the emblem of the Greek Red Cross on a white ground, or any sign or insignia made or colored in imitation thereof, or of the words "Red Cross" or "Geneva Cross" or any combination of these words: *Provided, however*, That no person, corporation, or association that actually used or whose assignor actually used the said emblem, sign, insignia, or words for any lawful purpose prior to January fifth, nineteen hundred and five, shall be deemed forbidden by this act to continue the use thereof for the same purpose and for the same class of goods. If any person violates the provision of this section he shall be deemed guilty of a misdemeanor, and upon conviction in any Federal court shall be liable to a fine of not less than one or more than five hundred dollars, or imprisonment for a term not exceeding one year or both, for each and every offense.

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SEC. 8. That the endowment fund of the American National Red Cross shall be kept and invested under the management and control of a board of nine trustees, who shall be elected from time to time by the incorporators and their successors under such regulations regarding terms and tenure of office, accountability, and expense as said incorporators and successors shall prescribe. [As amended by act of June 23, 1910, 36 Stat., 604.]

IV. RULES GOVERNING THE REGISTRATION OF TRADE-MARKS UNDER THE TRADE-MARK ACTS.

CORRESPONDENCE.

1. All business with the office should be transacted in writing. Unless by the consent of all parties, the action of the office will be based exclusively on the written record. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

2. Applicants and attorneys will be required to conduct their business with the office with decorum and courtesy. Papers presented in violation of this requirement will be returned; but all such papers will first be submitted to the commissioner, and only be returned by his direct order.

3. All letters should be addressed to "The Commissioner of Patents"; and all remittances by money order, check, or draft should be to his order.

4. A separate letter should, in every case, be written in relation to each distinct subject of inquiry or application. Complaints against the examiner in charge of trade-marks, assignments for record, fees, and orders for copies or abstracts must be sent to the office in separate letters.

5. Letters relating to pending applications should refer to the name of the applicant, the serial number of the application, and the date of filing. Letters relating to registered trade-marks should refer to the name of the registrant, the number and date of the certificate, and the merchandise to which the trade-mark is applied.

6. The personal attendance of applicants at the Patent Office is unnecessary. Their business can be transacted by correspondence.

7. When an attorney shall have filed his power of attorney, duly executed, the correspondence will be held with him.

8. A double correspondence with an applicant and his attorney, or with two attorneys, can not, generally, be allowed.

9. The office can not undertake to respond to inquiries propounded with a view to ascertain whether certain trade-marks have been registered, or, if so, to whom, or for what goods; nor can it give advice as to the nature and extent of the protection afforded by the law, or act as its expounder, except as questions may arise upon applications regularly filed.

10. Express, freight, postage, and all other charges on matter sent to the Patent Office must be prepaid in full; otherwise it will not be received.

ATTORNEYS.

11. The owner of a trade-mark may prosecute his own application for registration of such trade-mark, but he is advised, unless familiar with such matters, to employ a competent attorney. The office can not aid in the selection of an attorney.

A register of attorneys is kept in the Patent Office, on which is entered the names of all persons entitled to represent applicants before the Patent Office in the prosecution of applications for patents, and any registered attorney will be recognized in the prosecution of applications for registration of trade-marks.

Registration of an attorney merely for the prosecution of an application for registration of a trade-mark will not be required, but in the absence of registration recognition will be limited to each case. The commissioner reserves the right to decline to recognize any attorney, agent, or other person authorized to be recognized by the preceding provisions of this rule.

12. Before any attorney, original or associate, will be allowed to inspect papers or take action of any kind, his power of attorney must be filed. General powers given by a principal to an associate can not be considered. In each application the written authorization must be filed. A power of attorney purporting to have been given to a firm or copartnership will not be recognized, either in favor of the firm or of any of its members, unless all its members shall be named in such power of attorney.

13. Substitution or association may be made by an attorney upon the written authorization of his principal; but such authorization will not empower the second attorney to appoint a third.

14. Powers of attorney may be revoked at any stage in the proceedings of a case upon application to and approval by the commissioner; and, when so revoked, the office will communicate directly with the applicant, or such other attorney as he may appoint. A power of attorney appointing a second principal attorney will not be entered unless such power of attorney specifically revokes that given the principal attorney of record (rule 8). An attorney will be promptly notified by the docket clerk of the revocation of his power of attorney.

15. For gross misconduct the commissioner may refuse to recognize any person as an attorney, either generally or in any particular case; but the reasons for such refusal will be duly recorded and be subject to the approval of the Secretary of the Interior.

WHO MAY REGISTER A TRADE-MARK.

16. A trade-mark may be registered by any person, firm, corporation, or association domiciled within the territory of the United States, or residing in or located in any foreign country which, by treaty, convention, or law, affords similar privileges to the citizens of the United States, and who is the owner of such trade-mark, and uses the same in commerce with foreign nations, or among the several States, or with Indian tribes, upon payment of the fee required by law and other due proceedings had. (See rules 17 and 20.)

17. Except as provided by section 3 of the act of May 4, 1906, no trade-mark will be registered to an applicant residing or located in a foreign country unless such country, by treaty, convention, or law, affords similar privileges to the citizens of the United States, nor unless the trade-mark has been registered by the applicant in the foreign country in which he resides or is located, nor until such applicant has filed in this office a certified copy of the certificate of registration of his trade-mark in the country where he resides or is located. In such cases it is not necessary to state in the application that the trade-mark has been used in commerce with the United States or among the several States thereof.

18. The owner of a trade-mark, residing or located in a foreign country and who shall have a manufacturing establishment within the territory of the United States, may register a trade-mark used on the products of such establishment upon complying with the provisions of the act of February 20, 1905, as prescribed for owners of trade-marks domiciled within the territory of the United States.

WHAT MAY BE REGISTERED AS A TRADE-MARK.

19. No trade-mark will be registered to an owner domiciled within the territory of the United States unless it shall be made to appear that the same is used as such by said owner in commerce among the several States, or between the United States and some foreign nation or Indian tribe; no trade-mark, except as provided by section 3 of the act of May 4, 1906, will be registered to an owner residing in or located in a foreign country unless said country, by treaty, convention, or law, affords similar privileges to the citizens of the United States; no trade-mark will be registered which consists of or comprises immoral or scandalous matter, or which consists of or comprises the flag or coat of arms or other insignia of the United States, or any simulation thereof, or of any State or municipality, or of any foreign nation, or which consists of or comprises any design or picture that has been adopted by any fraternal society as its emblem, unless it shall be shown to the satisfaction of the Commissioner of Patents that the mark was adopted and used as a trade-mark by the applicant or applicant's predecessors, from whom title is derived, at a date prior to the date of its adoption by such fraternal society as its emblem, or which trade-mark is identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resembles a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers, or which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term; no portrait of a living individual will be registered as a trade-mark except by the consent of such individual evidenced by an instrument in writing; and no trade-mark will be registered which is used in unlawful business, or upon any article injurious in itself, or which has been used with the design of deceiving the public in the purchase of merchandise, or which has been abandoned.

20. Any mark, used in commerce with foreign nations or among the several States or with Indian tribes, may be registered if it has been in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for 10 years next preceding February 20, 1905. (See rule 32.)

THE APPLICATION.

21. An application for the registration of a trade-mark must be made to the Commissioner of Patents and must be signed by the applicant.

22. A complete application comprises:

(*a*) A petition requesting registration signed by the applicant.

(*b*) A statement specifying the name, domicile, location, and citizenship of the party applying; and if the applicant be a corporation or association, the State or nation under the laws of which organized; the class of merchandise (according to the official classification) and the particular description of goods comprised in such class upon which the trade-mark has actually been used; a statement of the mode in which the same is applied and affixed to the goods, and the length of time during which the trade-mark has been used upon the goods specified. A description of the trade-mark itself shall be included, if desired by the applicant or required by the commissioner, provided such description is of a character to meet the approval of the commissioner.

(*c*) A declaration complying with section 2 of the act of February 20, 1905, as amended by the act of February 18, 1909.

(*d*) A drawing of the trade-mark, signed by the applicant, or his attorney, which shall be a facsimile of the same as actually used upon the goods. (See rules 36 and 37.)

(*e*) Five specimens (or facsimiles, when, from the mode of applying or affixing the trade-mark to the goods, specimens can not be furnished) of the trade-mark as actually used upon the goods.

(*f*) A fee of $10.

23. The petition, the statement, and the declaration must be in the English language and written on one side of the paper only.

24. The name of the applicant will appear in the certificate of registration precisely as it signed to the statement of the application, and therefore the signature to the statement must be the correct signature of the applicant, and the name of the applicant wherever it appears in the papers of the application will be made to agree with the name as signed to the statement.

25. No information will be given, without authority of the applicant, respecting the filing of an application for the registration of a trade-mark by any person, or the subject matter thereof, unless it shall, in the opinion of the commissioner, be necessary to the proper conduct of business before the office.

26. All applications for registration pending in the Patent Office at the time of the passage of the act of February 20, 1905, may be amended with a view to bringing them and the certificates issued under such applications under the provisions of said act, and the prosecution of such applications may be proceeded with under its provisions without the payment of further fee. When such an application is amended to bring it under the act of February 20, 1905, it will be given a serial number and a date of filing under said act.

A trade-mark registered under the act of March 3, 1881, may be registered under the act of February 20, 1905; but the application for such registration will be subject to examination in the same manner as other applications filed under said act of February 20, 1905.

27. An application for registration of a trade-mark filed in this country by any person who has previously regularly filed in any foreign country which, by treaty, convention, or law, affords similar privileges to the citizens of the United States an application for registration of the same trade-mark shall be accorded the same force and effect as would be accorded to the same application if filed in this country on the date on which application for registration of the same trade-mark was first filed in such foreign country: *Provided*, That such application be filed in this country within four months from the date on which the application was first filed in such foreign country.

28. Every applicant for registration of a trade-mark or for renewal of registration of a trade-mark who is not domiciled within the United States shall, before the issuance

of the certificate of registration, designate, by a notice in writing, filed in the Patent Office, some person residing within the United States on whom process or notice of proceedings affecting the right of ownership of the trade-mark of which such applicant may claim to be the owner may be served. This notice shall be indorsed upon the file wrapper of the application.

29. In proceedings relating to an application or to a registration under the act of February 20, 1905, it shall be deemed sufficient to serve notice upon the applicant, registrant, or representative by leaving a copy of the process or notice of proceedings addressed to him at the last address of which the Commissioner of Patents has been notified.

30. A trade-mark may, at the option of the applicant, be registered on a single application for any or all goods comprised in a single class of merchandise, provided the particular description of goods be stated, and provided that the mark has been actually used upon all of the goods specified.

31. The application must be accompanied by a written declaration, verified by the applicant, or by a member of the firm, or by an officer of the corporation or association applying, to the effect that he believes himself, or the firm, corporation, or association, in whose behalf he makes the declaration, to be the owner of the trade-mark sought to be registered, and that no other person, firm, corporation, or association, to the best of his knowledge and belief, has the right to use the trade-mark in the United States, either in the identical form or any such near resemblance thereto as might be calculated to deceive; that such trade-mark is used in commerce among the several States or with foreign nations, or with Indian tribes; that the description and drawing truly represent the trade-mark sought to be registered; that the specimens (or facsimiles) show the mark as actually used upon the goods; and that the facts set forth in the statement are true. (See rule 17.)

32. Where application is made under section 5 of the act of February 20, 1905, on the ground that the mark has been in actual and exclusive use as a trade-mark by the applicant or his predecessors from whom he derived title, for 10 years next preceding February 20, 1905, the applicant shall, in addition to the requirements of section 2 of said act, make oath to such actual use of the mark as a trade-mark by himself or his predecessors, or by those from whom title to the same is derived, for the period specified, and that, to the best of his knowledge and belief, such use has been exclusive.

33. If the applicant resides or is located in a foreign country, the declaration required, unless the application be presented under the provisions of section 3 of the act of May 4, 1906, shall also set forth that the trade-mark has been registered by the applicant, or that an application for the registration thereof has been filed by him in the foreign country in which he resides or is located, and shall give the date of such registration or of the application therefor, as the case may be. In such cases it shall not be necessary to state that the mark has been used in commerce with the United States or among the States thereof.

If the application be presented under the provisions of section 3 of the act of May 4, 1906, the declaration, in addition to the requirements of rule 31, must state that the applicant has a manufacturing establishment within the territory of the United States, and that the goods upon which the trade-mark is used are the product of such establishment.

34. The declaration may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States, or before any notary public, judge, or magistrate having an official seal, and authorized to administer oaths in the foreign country in which the applicant may be, whose authority shall be proved by the certificate of a diplomatic or consular officer of the United States, the declaration being attested in all cases, in this and other countries, by the proper official seal of

the officer before whom the same is made, except that no acknowledgment may be taken before any attorney appearing in the case. When the person before whom the declaration is made is not provided with a seal, his official character shall be established by competent evidence, as by a certificate of a clerk of a court of record, or other proper officer having a seal.

35. Amendment of the declaration will not be permitted. If that filed with the application be faulty or defective, a substitute declaration must be filed.

DRAWING.

36. (1) The drawing must be made upon pure white paper of a thickness corresponding to two-sheet bristol board. The surface of the paper must be calendered and smooth. India ink alone must be used, to secure perfectly black and solid lines.

(2) The size of a sheet on which a drawing is made must be exactly 10 by 15 inches. One inch from its edges a single marginal line is to be drawn, leaving the "sight" precisely 8 by 13 inches. Within this margin all work and signatures must be included. One of the shorter sides of the sheet is regarded as its top, and, measuring downwardly from the marginal line, a space of not less than 1½ inches is to be left blank for the heading of title, name, number, and date.

(3) All drawings must be made with the pen only. Every line and letter, signatures included, must be absolutely black. This direction applies to all lines, however fine, and to shading. All lines must be clean, sharp, and solid, and they must not be too fine or crowded. Surface shading, when used, should be open.

(4) The name of the proprietor of the trade-mark, signed by himself or by his attorney of record, must be placed at the lower right-hand corner of the sheet within the marginal lines, but in no instance should it encroach upon the drawing.

(5) When the view is longer than the width of the sheet, the sheet should be turned on its side and the heading should be placed at the right and the signature at the left, occupying the same space and position as in an upright view and being horizontal when the sheet is held in an upright position.

(6) Drawings transmitted to the office should be sent flat, protected by a sheet of heavy binder's board, or should be rolled for transmission in a suitable mailing tube. They should never be folded.

(7) An agent's or attorney's stamp, or advertisement, or written address will not be permitted upon the face of a drawing, within or without the marginal line.

37. The office, at the request of applicants, will furnish the drawings at cost.

EXAMINATION OF APPLICATIONS.

38. All complete applications for registration are considered, in the first instance, by the examiner in charge of trade-marks. Whenever, on examination of an application, registration is refused for any reason whatever, the applicant will be notified thereof. The reasons for such refusal will be stated, and such information and references will be given as may be useful in aiding the applicant to judge of the propriety of further prosecuting his application.

39. The examination of an application and the action thereon will be directed throughout to the merits, but in each letter the examiner shall state or refer to all his objections.

40. If, on examination of an application for the registration of a trade-mark, it shall appear that the applicant is entitled to have his trade-mark registered under the provisions of the law, the mark will be published in the Official Gazette at least once. Such publication shall be at least 30 days prior to the date of registration.

If no notice of opposition be filed within 30 days after such publication, the applicant or his attorney will be duly notified of the allowance of his application, and a certificate of registration will be issued as provided in rule 58.

The weekly issue closes on Thursday, and the certificates of registration of that issue bear date as of the fourth Tuesday thereafter.

AMENDMENTS.

41. The statement may be amended to correct informalities, or to avoid objections made by the office, or for other reasons arising in the course of examination, but no amendments to the description or drawing of the trade-mark will be permitted unless warranted by something in the specimens (or facsimiles) as originally filed.

42. In every amendment the exact word or words to be stricken out or inserted in the statement must be specified and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper.

Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant or attorney.

43. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause as finally amended when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the examiner may require the entire statement to be rewritten.

44. After allowance, the examiner will exercise jurisdiction over an application only by special authority from the commissioner.

Amendments may be made after the allowance of an application, if the case has not been printed, on the recommendation of the examiner, approved by the commissioner, without withdrawing the case from issue.

45. After the completion of the application, the office will not return the papers for any purpose whatever. If the applicant has not preserved copies of the papers which he wishes to amend, the office will furnish them on the usual terms.

45a. If an applicant fail to prosecute his application within one year prior to November 1, 1911, or for one year after the date when the last official notice of any action by the office was mailed to him, the application will be held to be abandoned, as set forth in rule 57a.

45b. Whenever action upon an application is suspended upon request of an applicant and whenever an applicant has been called upon to put his application in condition for interference, the period of one year running against such application shall be considered as beginning at the date of the last official action preceding such actions.

45c. Acknowledgment of the filing of an application is an official action. Suspensions will only be granted for good and sufficient cause and for a reasonable time specified.

45d. Only one suspension will be granted by the examiner of trade-marks. Any further suspension must be approved by the commissioner.

INTERFERENCE, OPPOSITION, AND CANCELLATION.

46. Whenever application is made for the registration of a trade-mark which is substantially identical with a trade-mark appropriated to goods of the same descriptive properties, for which a certificate of registration has been previously issued to another, or for registration of which another had previously made application, or which so nearly resembles such trade-mark, or a known trade-mark owned and used by another, as, in the opinion of the commissioner, to be likely to be mistaken therefor by the public, an interference will be declared.

The practice in trade-mark interferences will follow, as nearly as practicable, the practice in interferences between applications for patents.

47. Before the declaration of interference, all preliminary questions must have been settled by the examiner in charge of trade-marks, and the trade-mark which is to form the subject matter of the controversy must have been decided to be registrable, and must have been published at least once in the Official Gazette of the Patent Office.

Whenever two or more applicants are found to be claiming substantially the same registrable trade-mark, and the application of one of the applicants is ready for publication, the examiner in charge of trade-marks may require the other applicants to put their applications in condition for publication within a time specified, in order that an interference may be declared. If any party fail to put his application in condition for publication within the time specified, the declaration of interference will not be delayed, but after final judgment the application of such party will be held for revision and restriction, subject to interference with other applications or registered trade-marks.

48. The examiner in charge of interferences may, either before or in his final decision in an interference or opposition, direct the attention of the commissioner to any matter which may have come to his notice which can not be acted upon by him, which in his opinion precludes a proper determination of questions raised by the proceeding, or which amounts to a statutory bar to registration of the mark to any or all of the parties. The commissioner may, before judgment, suspend the interference or opposition and remand the same to the examiner in charge of trade-marks for his consideration of the matters to which attention has been directed. If the case be not so remanded, the examiner in charge of trade-marks will, after judgment, consider any matter affecting right to registration which may have been brought to his attention, unless the same shall have been previously disposed of in the proceeding. From the decision of the examiner in charge of trade-marks appeals may be taken as in other cases.

49. Motions to dissolve an interference upon the ground that no interference in fact exists, or that there has been such irregularity in declaring the same as will preclude a proper determination of the question of the right of registration, or which deny the registrability of an applicant's mark, should contain a full statement of the grounds relied upon, and should, if possible, be made not later than the thirtieth day after the notices of the interference have been mailed. Such motions, and all motions of a similar character, should be accompanied by a motion to transmit the same to the examiner in charge of trade-marks, and such motion to transmit will be noticed for hearing upon a day certain before the examiner in charge of interferences. When in proper form the motion presented will, with the files and papers, be transmitted by the examiner in charge of interferences for determination, to the examiner in charge of trade-marks, who will thereupon fix a day certain when said motion will be heard before him upon the merits, and give notice thereof to all the parties. If a stay of proceedings be desired, a motion therefor should accompany the motion for transmission.

When the motion has been decided by the examiner in charge of trade-marks, the files and papers, with his decision, will be sent at once to the docket clerk.

Motions to shift the burden of proof should be made before, and will be determined by, the examiner in charge of interferences. No appeal from the decision on such motion will be entertained, but the matter may be reviewed on appeal from the final decision upon the question of priority.

50. The decision of the examiner in charge of trade-marks, upon a motion for dissolution, will be binding upon the examiner in charge of interferences unless reversed or modified on appeal. Unless appeal be taken within the time limited for appeal, the examiner in charge of trade-marks will return the files and papers with his decision to the examiner in charge of interferences.

51. Any person who believes he would be damaged by the registration of a mark may oppose the same by filing a written notice of opposition, stating the grounds therefor, within 30 days after the publication of the mark sought to be registered, which notice of opposition shall be accompanied by the fee required by law and shall be verified by the person filing the same before one of the officers mentioned in section 2 of the act of February 20, 1905. An opposition may be filed by a duly author-

ized attorney, but such opposition shall be null and void unless duly verified by the opposer within a reasonable time after such filing. A duplicate copy of the notice of opposition must be filed, either with the notice of opposition or within a reasonable time after the filing of the same.

52. Any person, deeming himself to be injured by the registration of a trade-mark in the Patent Office, may, at any time, make application to the commissioner to cancel the registration thereof. Such application shall be filed in duplicate, shall state the grounds for cancellation, and shall be verified by the person filing the same, before one of the officers mentioned in section 2 of the act of February 20, 1905. (See rule 34.)

53. If it shall appear, after a hearing before the examiner of interferences, that the registrant was not entitled to the use of the mark at the date of his application for registration thereof, or that the mark is not used by the registrant, or has been abandoned, and the examiner in charge of interferences shall so decide, the commissioner shall cancel the registration of the mark, unless appeal be taken within the limit fixed.

54. In cases of opposition, and of applications for cancellation, the examiner in charge of trade-marks shall forward the files and papers to the examiner in charge of interferences, who shall give notice thereof to the applicant or registrant. The applicant or registrant must make answer at such time, not less than 30 days from the date of the notice, as shall be fixed by the examiner in charge of interferences.

55. The proceedings, on oppositions, and on applications for cancellation, shall follow, as nearly as practicable, the practice in interferences between applications for patents.

APPEALS.

56. Every applicant whose mark has been twice refused registration by the examiner of trade-marks for the same reasons, upon grounds involving the merits of the application, may appeal to the commissioner in person upon payment of the fee required by law. Such refusal may be considered by the examiner of trade-marks as final.

There must have been two refusals to register the mark as originally filed, or, if amended in matter of substance, the amended mark, and, except in cases of division, all preliminary and intermediate questions relating to matters not affecting the merits of the application must have been settled before the case can be appealed to the commissioner.

Upon receiving a petition stating concisely and clearly any proper question which has been acted upon by the examiner in charge of trade-marks and which does not involve the merits of the trade-mark claimed, the refusal of registration of the trade-mark, or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the commissioner, and directing the examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The examiner shall, at the time of making such statement, furnish a copy thereof to the petitioner. No fee is required for such a petition.

57. From the adverse decision of the Commissioner of Patents upon the right of an applicant to register a trade-mark, or to renew the registration of a trade-mark, or from the decision of the commissioner in cases of interference, opposition or cancellation, an appeal may be taken to the Court of Appeals of the District of Columbia in the manner prescribed by the rules of that court.

ABANDONED APPLICATIONS.

57a. An abandoned trade-mark application is one which has not been prosecuted within one year prior to November 1, 1911, or completed and prepared for examination

within one year after the filing of the petition, or which the applicant has failed to prosecute within one year after any action therein of which notice has been duly given or which the applicant has expressly abandoned by filing in the office a written declaration of abandonment, signed by himself and assignee, if any, identifying his application by serial number and date of filing.

57b. Prosecution of an application to save it from abandonment must include such proper action as the condition of the case may require. The admission of an amendment not responsive to the last official action, or refusal to admit the same, and any proceedings relative thereto, shall not operate to save the application from abandonment.

57c. Before an application abandoned by failure to complete or prosecute can be revived as a pending application it must be shown to the satisfaction of the commissioner that the delay in the prosecution of the same was unavoidable.

57d. When a new application is filed in place of an abandoned or rejected application, a new petition, statement, declaration, drawing, and fee will be required.

ISSUE, DATE, AND DURATION OF CERTIFICATE.

58. When the requirements of the law and of the rules have been complied with, and the office has adjudged a trade-mark registrable, a certificate will be issued, signed by the commissioner, under the seal of the Patent Office, to the effect that the applicant has complied with the law and that he is entitled to registration of his trade-mark. The certificate shall state the date on which the application for registration was received in the Patent Office. Attached to the certificate will be a photolithographed copy of the drawing of the trade-mark and a printed copy of the statement and of the declaration.

59. A certificate of registration shall remain in force 20 years from its date, except that, in case a trade-mark be previously registered in a foreign country, such certificate shall cease to be in force on the day on which the trade-mark ceases to be protected in such foreign country, and shall in no case remain in force more than 20 years unless renewed.

60. A certificate of registration may be, from time to time, renewed for like periods on payment of the renewal fees required, upon request by the registrant, his legal representatives, or transferees of record in the Patent Office, and such request may be made at any time not more than six months prior to the expiration of the period for which the certificate of registration was issued or renewed.

61. Certificates of registration in force on the 1st day of April, 1905, shall remain in force for the periods for which they were issued, and shall be renewable on the same conditions and for the same periods as certificates issued under the provisions of the act of February 20, 1905, and, when so renewed, shall have the same force and effect as certificates issued thereunder.

62. A certificate of registration shall not be issued to an applicant located in a foreign country for any trade-mark, for registration of which he has filed an application in such foreign country, until such mark has been actually registered by him in the country in which he is located.

ASSIGNMENTS.

63. Every registered trade-mark and every mark for the registration of which application has been made, together with the application for registration thereof, shall be assignable in connection with the good will of the business in which the mark is used. Such assignment must be by an instrument in writing and duly acknowledged according to the laws of the country or State in which the same is executed. Provision is made for recording such assignments in the Patent Office, but no such assignment will be recorded unless it is in the English language, nor unless an application for the registration of the mark shall have been first filed in the Patent Office, and such assignment must identify the application by serial number

and date of filing, or, when the mark has been registered, by the certificate number and the date thereof. No particular form of assignment is prescribed.

64. An assignment shall be void as against any subsequent purchaser for a valuable consideration, without notice, unless it be recorded in the Patent Office within three months from the date thereof.

65. The certificate of registration may be issued to the assignee of the applicant, but the assignment must first be entered of record in the Patent Office.

COPIES AND PUBLICATIONS.

66. After a trade-mark has been registered, printed copies of the statement and declaration in each case, with a photolithographed copy of the drawing of the trade-mark, may be furnished by the office upon the payment of the fee. (See rule 69.)

67. An order for a copy of an assignment must give the liber and page of the record, as well as the name of the applicant; otherwise an extra charge will be made for the time consumed in making a search for such assignment.

68. The Official Gazette of the Patent Office will contain a list of all trade-marks registered, giving, in each case, a statement of the goods to which the trade-mark is applied, the name and address of the applicant, the date of filing and serial number of the application, and the date of the publication of the trade-mark in the Official Gazette.

FEES.

69.

On filing each original application for registration of a trade-mark	$10.00
On filing each application for renewal of the registration of a trade-mark	10.00
On filing notice of opposition to the registration of a trade-mark	10.00
On appeal from the examiner in charge of trade-marks to the Commissioner of Patents	15.00
On appeal from the decision of the examiner in charge of interferences, awarding ownership of a trade-mark or canceling the registration of a trade-mark, to the Commissioner of Patents	15.00
On appeal from the decision of the examiner in charge of trade-marks, on a motion for the dissolution of an interference on the ground of noninterference in fact or nonregistrability of a mark, to the Commissioner of Patents	15.00
For manuscript copies, for every 100 words or fraction thereof	.10
For recording every assignment, power of attorney, or other paper of 300 words or under	1.00
Of over 300 and under 1,000 words	2.00
And for each additional thousand words or fraction thereof	1.00
For abstracts of title:	
For the search, one hour or less, and certificate	1.00
Each additional hour or fraction thereof	.50
For each brief from the digest of assignments of 200 words or less	.20
Each additional hundred words or fraction thereof	.10
For searching titles or records, one hour or less	.50
Each additional hour or fraction thereof	.50
For a single printed copy of statement, declaration, and drawing	.05
If certified, for the grant, additional	.50
For the certificate	.25

70. All payments of money required for office fees must be made in specie, Treasury notes, national-bank notes, Treasury certificates of deposit, post-office money orders, bank drafts, or certified checks. Money orders and checks should be made payable to the "Commissioner of Patents." Payment may also be made to the Treasurer, or to any of the assistant treasurers of the United States, or to any of the depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit.

therefor. The duplicate receipt or certificate of deposit must be filed in the Patent Office within 10 days after the money is paid.

71. Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered.

REPAYMENT OF MONEY.

72. Money paid by actual mistake, such as a payment in excess or when not required by law, or by the neglect or misinformation on the part of the office, will be refunded; but a mere change of purpose after the payment of money, as when a party desires to withdraw his application for the registration of a trade-mark, or to withdraw an appeal, will not entitle a party to demand such a return.

NOTICE OF REGISTRATION.

73. It shall be the duty of the registrant to give notice to the public that a trade-mark is registered, either by affixing thereon the words "Registered in U. S. Patent Office," or "Reg. U. S. Pat. Off.," or, when from the character and size of the trade-mark, or from its manner of attachment to the article to which it is appropriated, this can not be done, then by affixing a label containing a like notice to the package or receptacle wherein the article or articles are inclosed; otherwise, on a suit for infringement, no damages shall be recovered except on proof that the defendant was duly notified of infringement, and continued the same after such notice.

AMENDMENT OF THE RULES.

74. All amendments of the foregoing rules will be published in the Official Gazette.

QUESTIONS NOT SPECIFICALLY PROVIDED FOR.

75. All cases not specifically defined and provided for in these rules will be decided in accordance with the merits of each case under the authority of the commissioner, and such decision will be communicated to the interested parties in writing.

* * * * * * *

RECORDING TRADE-MARKS WITH COLLECTORS OF CUSTOMS.

TREASURY DEPARTMENT, *September 7, 1909.*

To collectors of customs and others concerned:

The attention of officers of the customs and others is invited to the following provisions of section 27 of the act approved February 20, 1905, effective April 1, 1905:

"SEC. 27. That no article of imported merchandise which shall copy or simulate the name of any domestic manufacture, or manufacturer or trader, or of any manufacturer or trader located in any foreign country which, by treaty, convention, or law affords similar privileges to citizens of the United States, or which shall copy or simulate a trade-mark registered in accordance with the provisions of this act, or shall bear a name or mark calculated to induce the public to believe that the article is manufactured in the United States, or that it is manufactured in any foreign country or locality other than the country or locality in which it is in fact manufactured, shall be admitted to entry at any customhouse of the United States; and, in order to aid the officers of the customs in enforcing this prohibition, any domestic manufacturer or trader, and any foreign manufacturer or trader, who is entitled under the provision of a treaty, convention, declaration, or agreement between the United States and any foreign country to the advantages afforded by law to citizens of the United States in respect to trade-marks and commercial names, may require his name and residence, and the name of the locality in which his goods are manufactured, and a copy of the certificate of registration of his trade-mark, issued in accordance with the provisions of this act, to be recorded in books which shall be kept for this purpose in the Department of the Treasury, under such regulations as the Secretary of the Treasury shall prescribe, and may furnish to the department facsimiles

of his name, the name of the locality in which his goods are manufactured, or of his registered trade-mark; and thereupon the Secretary of the Treasury shall cause one or more copies of the same to be transmitted to each collector or other proper officer of customs."

The provisions of this section give to manufacturers and traders located in foreign countries, which, by treaty stipulations, give similar privileges to the United States, the same advantages as are given to domestic manufacturers and traders. The act does not affect names or trade-marks heretofore recorded in the Treasury Department, and as to them the protection granted so far as concerns prohibition of importation will continue. Nor does the act appear to make it compulsory on the part of domestic manufacturers or traders, or foreign manufacturers or traders, to register names (not trade-marks) with the Commissioner of Patents, in order to prevent illegal importations.

Domestic manufacturers and traders and foreign manufacturers and traders, to avail themselves of the privileges of the act, so far as concerns trade-marks, are required to register their trade-marks with the Commissioner of Patents before the Treasury Department can act.

Applications for recording the names and trade-marks in this department under section 27 will state the name of the owner, his residence, and the locality in which his goods are manufactured, and in the case of trade-marks should be accompanied with a certified copy of the certificate of registration of his trade-mark issued in accordance with the provisions of the act and the names of the ports to which facsimiles should be sent. In the case of the name of a domestic manufacture, manufacturer, or trader (not registered as a trade-mark in the Patent Office), the application must be accompanied by the proper proof of ownership and proof as to the country or locality in which his goods are manufactured, which must consist of the affidavit of the owner or one of the owners, certified by an officer entitled to administer oaths and having a seal.

On the receipt by a customs officer of any such facsimiles, with information from the department that they have been recorded therein, he will properly record and file them and will exercise care to prevent the entry at the customhouse of any article of foreign manufacture copying or simulating such mark.

No fees are charged for recording trade-marks in the Treasury Department and customhouses.

A sufficient number of facsimiles should be forwarded to enable the department to send one copy to each port named in the application, with ten additional copies for the files of the department.

Especial attention is invited to the provision in said section prohibiting the entry of articles "which shall bear a name or mark calculated to induce the public to believe that the article is manufactured in the United States, or that it is manufactured in any foreign country or locality other than the country or locality in which it is in fact manufactured," and collectors and other officers of the customs are instructed to use due diligence to prevent violations of this provision.

The provisions of the act also apply to Porto Rico, the Philippine Islands, Hawaii, and any other territory under the jurisdiction and control of the United States.

Attention is also invited to the following provisions of section 3 of the act approved May 4, 1906, effective July 1, 1906:

"SEC. 3. That any owner of a trade-mark who shall have a manufacturing establishment within the territory of the United States shall be accorded, so far as the registration and protection of trade-marks used on the products of such establishment are concerned, the same rights and privileges that are accorded to owners of trade-marks domiciled within the territory of the United States by the act entitled 'An act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same,' approved February 20, 1905."

This department has ruled that affidavits accompanying applications for recording the names of foreign manufactures, manufacturers, or traders (not registered as trademarks in the Patent Office) may be certified by American consular officers.

JAMES B. REYNOLDS,
Acting Secretary.

CLASSIFICATION OF MERCHANDISE UNDER THE ACT OF MAY 4, 1906.

1. Raw or partly prepared materials.
2. Receptacles.
3. Baggage, horse equipments, portfolios, and pocketbooks.
4. Abrasive, detergent, and polishing materials.
5. Adhesives.
6. Chemicals, medicines, and pharmaceutical preparations.
7. Cordage.
8. Smokers' articles, not including tobacco products.
9. Explosives, firearms, equipments, and projectiles.
10. Fertilizers.
11. Inks and inking materials.
12. Construction materials.
13. Hardware and plumbing and steam-fitting supplies.
14. Metals and metal castings and forgings.
15. Oils and greases.
16. Paints and painters' materials.
17. Tobacco products.
19. Vehicles, not including engines.
20. Linoleum and oiled cloth.
21. Electrical apparatus, machines, and supplies.
22. Games, toys, and sporting goods.
23. Cutlery, machinery, and tools, and parts thereof.
24. Laundry appliances and machines.
25. Locks and safes.
26. Measuring and scientific appliances.
27. Horological instruments.
28. Jewelry and precious-metal ware.
29. Brooms, brushes, and dusters.
30. Crockery, earthenware, and porcelain.
31. Filters and refrigerators.
32. Furniture and upholstery.
33. Glassware.
34. Heating, lighting, and ventilating apparatus, not including electrical apparatus.
35. Belting, hose, machinery packing, and nonmetallic tires.
36. Musical instruments and supplies.
37. Paper and stationery.
38. Prints and publications.
39. Clothing.
40. Fancy goods, furnishings, and notions.
41. Canes, parasols, and umbrellas.
42. Knitted, netted, and textile fabrics.
43. Thread and yarn.
44. Dental, medical, and surgical appliances.
45. Beverages, nonalcoholic.
46. Foods and ingredients of foods.
47. Wines.
48. Malt extracts and liquors
49. Distilled alcoholic liquors.
50. Merchandise not otherwise classified.

NOTE.—Class 18 was abolished February 24, 1909.

V. Prints and Labels Laws.

[Act of June 18, 1874 (18 Stat., 78).]

SEC. 3. That in the construction of this act the words "engraving," "cut," and "print" shall be applied only to pictorial illustrations or works connected with the fine arts, and no prints or labels designed to be used for any other articles of manufacture shall be entered under the copyright law, but may be registered in the Patent Office. And the Commissioner of Patents is hereby charged with the supervision and control of the entry or registry of such prints or labels, in conformity with the regulations provided by law as to copyright of prints, except that there shall be paid for recording the title of any print or label, not a trade-mark, six dollars, which shall cover the expense of furnishing a copy of the record, under the seal of the Commissioner of Patents, to the party entering the same.

SEC. 4. That all laws and parts of laws inconsistent with the foregoing provisions be, and the same are hereby, repealed.

SEC. 5. That this act shall take effect on and after the first day of August, eighteen hundred and seventy-four.

[Act of Mar. 4, 1909 (35 Stat., 1075).]

That any person entitled thereto, upon complying with the provisions of this act, shall have the exclusive right:

(*a*) To print, reprint, publish, copy, and vend the copyrighted work.

SEC. 7. That no copyright shall subsist in the original text of any work which is in the public domain, or in any work which was published in this country or any foreign country prior to the going into effect of this act and has not been already copyrighted in the United States, or in any publication of the United States Government, or any reprint, in whole or in part, thereof: *Provided, however*, That the publication or republication by the Government, either separately or in a public document, of any material in which copyright is subsisting shall not be taken to cause any abridgment or annulment of the copyright or to authorize any use or appropriation of such copyright material without the consent of the copyright proprietor.

SEC. 8. That the author or proprietor of any work made the subject of copyright by this act, or his executors, administrators, or assigns, shall have copyright for such work under the conditions and for the terms specified in this act: *Provided, however*, That the copyright secured by this act shall extend to the work of an author or proprietor who is a citizen or subject of a foreign State or nation only:

(*a*) When an alien author or proprietor shall be domiciled within the United States at the time of the first publication of his work; or

(*b*) When the foreign state or nation of which such author or proprietor is a citizen or subject grants, either by treaty, convention, agreement, or law, to citizens of the United States the benefit of copyright on substantially the same basis as to its own citizens, or copyright protection substantially equal to the protection secured to such foreign author under this act or by treaty; or when such foreign state or nation is a party to an international agreement which provides for reciprocity in the granting of copyright, by the terms of which agreement the United States may, at its pleasure, become a party thereto.

The existence of the reciprocal conditions aforesaid shall be determined by the President of the United States, by proclamation made from time to time, as the purposes of this act may require.

SEC. 9. That any person entitled thereto by this act may secure copyright for his work by publication thereof with the notice of copyright required by this act; and such notice shall be affixed to each copy thereof published or offered for sale in the United States by authority of the copyright proprietor, except in the case of books seeking ad interim protection. * * *

SEC. 18. That the notice of copyright required by section nine of this act shall consist either of the word "Copyright" or the abbreviation "Copr.," accompanied by the name of the copyright proprietor, and if the work be a printed literary, musical, or dramatic work, the notice shall include also the year in which the copyright was secured by publication. In the case, however, of copies of works specified in subsections (f) to (k) inclusive, of section five of this act, the notice may consist of the letter C inclosed within a circle, thus: ©, accompanied by the initials, monogram, mark, or symbol of the copyright proprietor: *Provided*, That on some accessible portion of such copies or of the margin, back, permanent base, or pedestal, or of the substance on which such copies shall be mounted, his name shall appear. But in the case of works in which copyright is subsisting when this act shall go into effect, the notice of copyright may be either in one of the forms prescribed herein or in one of those prescribed by the act of June eighteenth, eighteen hundred and seventy-four.

SEC. 23. That the copyright secured by this act shall endure for twenty-eight years from the date of first publication, whether the copyrighted work bears the author's true name or is published anonymously or under an assumed name: *Provided*, That in the case of any posthumous work or of any periodical, cyclopædic, or other composite work upon which the copyright was originally secured by the proprietor thereof, or of any work copyrighted by a corporate body (otherwise than as assignee or licensee of the individual author) or by an employer for whom such work is made for hire, the proprietor of such copyright shall be entitled to a renewal and extension of the copyright in such work for the further term of twenty-eight years when application for such renewal and extension shall have been made to the copyright office and duly registered therein within one year prior to the expiration of the original term of copyright: *And provided further*, That in the case of any other copyrighted work, including a contribution by an individual author to a periodical or to a cyclopædic or other composite work when such contribution has been separately registered, the author of such work, if still living, or the widow, widower, or children of the author, if the author be not living, or if such author, widow, widower, or children be not living, then the author's executors, or in the absence of a will, his next of kin shall be entitled to a renewal and extension of the copyright in such work for a further term of twenty-eight years when application for such renewal and extension shall have been made to the copyright office and duly registered therein within one year prior to the expiration of the original term of copyright: *And provided further*, That in default of the registration of such application for renewal and extension, the copyright in any work shall determine at the expiration of twenty-eight years from first publication.

SEC. 24. That the copyright subsisting in any work at the time when this act goes into effect may, at the expiration of the term provided for under existing law, be renewed and extended by the author of such work if still living, or the widow, widower, or children of the author, if the author be not living, or if such author, widow, widower, or children be not living, then by the author's executors, or in the absence of a will, his next of kin, for a further period such that the entire term shall be equal to that secured by this act, including the renewal period: *Provided, however*, That if the work be a composite work upon which copyright was originally secured by the proprietor thereof, then such proprietor shall be entitled to the privilege of renewal and extension granted under this section: *Provided*, That application for such renewal and extension shall be made to the copyright office and duly registered therein within one year prior to the expiration of the existing term.

SEC. 42. That copyright secured under this or previous acts of the United States may be assigned, granted, or mortgaged by an instrument in writing signed by the proprietor of the copyright, or may be bequeathed by will.

VI. Rules Governing the Registration of Prints and Labels in the Patent Office.

CORRESPONDENCE.

1. All business with the office should be transacted in writing. Unless by the consent of all parties, the action of the office will be based exclusively on the written record. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

2. Applicants and attorneys will be required to conduct their business with the office with decorum and courtesy. Papers presented in violation of this requirement will be returned. But all such papers will first be submitted to the commissioner, and only returned by his direct order.

3. All letters should be addressed to "The Commissioner of Patents;" and all remittances by postal order, certified check, or draft should be to his order.

4. A separate letter should in every case be written in relation to each distinct subject of inquiry or application. Complaints against the examiner, assignments for record, fees, and orders for copies or abstracts must be sent to the office in separate letters.

5. Letters relating to pending applications should refer to the name of the applicant and date of filing. Letters relating to registered prints and labels should refer to the name of registrant and number and date of certificate.

6. The personal attendance of applicants at the Patent Office is unnecessary. Their business can be transacted by correspondence.

7. When an attorney shall have filed his power of attorney, duly executed, the correspondence will be held with him.

8. A double correspondence with an applicant and his attorney, or with two attorneys, can not generally be allowed.

9. The office can not undertake to respond to inquiries propounded with a view to ascertain whether certain prints and labels have been registered, or, if so, to whom, or for what goods; nor can it give advice as to the nature and extent of the protection afforded by the law, or act as its expounder, except as questions may arise upon applications regularly filed.

10. Express, freight, postage, and all other charges on matter sent to the Patent Office must be prepaid in full; otherwise it will not be received.

ATTORNEYS.

11. An applicant may prosecute his own case, but he is advised, unless familiar with such matters, to employ a competent attorney. The office can not aid in the selection of any attorney.

12. Before any attorney, original or associate, will be allowed to inspect papers or take action of any kind, his power of attorney must be filed. But general powers given by a principal to an associate can not be considered. In each application the written authorization must be filed. A power of attorney purporting to have been given to a firm or copartnership will not be recognized, either in favor of the firm or any of its members, unless all its members shall be named in such power of attorney.

13. Substitution or association can be made by an attorney upon the written authorization of his principal; but such authorization will not empower the second attorney to appoint a third.

14. Powers of attorney may be revoked at any stage in the proceedings of a case upon application to and approval by the commissioner; and when so revoked the office will communicate directly with the applicant or such other attorney as he may appoint. An attorney will be promptly notified by the docket clerk of the revocation of his power of attorney.

15. For gross misconduct the commissioner may refuse to recognize any person as an attorney, either generally or in any particular case; but the reasons for such refusal will be duly recorded and be subject to the approval of the Secretary of the Interior.

WHO MAY REGISTER A PRINT OR LABEL.

16. (*a*) The author or proprietor of any print or label, or his executors, administrators, or assigns, who is a citizen of the United States.

(*b*) An alien author or proprietor of any print or label, or his executors, administrators, or assigns, only as provided by section 8 of the copyright act approved March 4, 1909.

Any person to whom an author who has the privilege of copyright in the United States has transferred his copyright can apply for and obtain a copyright entry as a proprietor.

THE APPLICATION.

17. To entitle the author or proprietor of any such print or label or his executors, administrators, or assigns to register the same in the Patent Office, the application for registration thereof must be made to the Commissioner of Patents, and the said application should be signed by the author or proprietor, or by his executors, administrators, or assigns, or for the author or proprietor by duly authorized agent.

18. A complete application comprises—

(*a*) A statement addressed to the Commissioner of Patents, disclosing applicant's name, citizenship, residence, and place of doing business; whether author, proprietor, or executors, administrators, or assigns of the author or proprietor; and, if proprietor, a disclosure of the citizenship of the author, the title of the print or label, and the name of the article of manufacture for which the print or label is to be used.

(*b*) Ten copies of the print or label, one of which, when the print or label is registered, shall be certified under the seal of the Patent Office and returned to the author or proprietor.

(*c*) A fee of $6.

(*d*) A statement of the date when the print or label was first published with notice of copyright. (See sec. 9 of act of Mar. 4, 1909.)

19. The title of the print or label must appear on the copies filed.

20. Pending applications are preserved in secrecy, and no information will be given without authority of the applicant respecting the filing of an application for the registration of a print or label by any person, or the subject matter thereof, unless it shall, in the opinion of the commissioner, be necessary to the proper conduct of business before the office.

EXAMINATION OF APPLICATIONS.

21. The so-called print and label section of the copyright statute, approved June 18, 1874, is construed to provide for the registration of any print or label without examination as to its novelty.

22. All applications for registration are considered in the first instance by the examiner. Whenever, on examination of an application, registration is refused for any reason whatever, the applicant will be notified thereof. The reasons for such rejection will be stated, and such information will be given as may be useful in aiding the applicant to judge of the propriety of further prosecuting his application.

23. The examination of an application and the action thereon will be directed throughout to the merits, but in each letter the examiner shall state or refer to all his objections.

AMENDMENTS.

24. The application may be amended to correct informalities or to avoid objections made by the office, or for other reasons arising in the course of examination, and if the copies of the prints or labels furnished are for any reason not registrable under the

copyright law the applicant may substitute copies which conform to the requirements of said law.

25. In every amendment the exact word or words to be stricken out or inserted must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed and written on but one side of the paper.

26. After allowance, the examiner will exercise jurisdiction over an application only by special authority from the commissioner.

Amendments may be made after the allowance of an application on the recommendation of the examiner, approved by the commissioner, without withdrawing the case from issue.

27. After the completion of the application, the office will not return the papers for any purpose whatever. If the applicant has not preserved copies of the papers which he wishes to amend, the office will furnish them on the usual terms. (See rule 38.)

SUBJECT MATTER OF APPLICATION.

28. The word "print," as used in section 3 of the copyright act, so far as it relates to registration in the Patent Office, is defined as an artistic and intellectual production designed to be used for an article of manufacture and in some fashion pertaining thereto, but not borne by it; such, for instance, as an advertisement thereof.

29. The word "label," as used in this act, so far as it relates to registration in the Patent Office, is defined as an artistic and intellectual production impressed or stamped directly upon the article of manufacture or upon a slip or piece of paper or other material to be attached in any manner to manufactured articles or to bottles, boxes, and packages containing them to indicate the article of manufacture.

30. No print or label can be registered unless it properly belongs to an article of manufacture and is descriptive thereof and is as above defined.

APPEALS.

31. An adverse decision by the examiner who has charge of the registration of prints and labels, upon an applicant's right to have a print or label registered, will be reviewed by the commissioner in person, on appeal, without fee.

ISSUE, DATE, AND DURATION OF CERTIFICATE.

32. When the requirements of the law and of the rules have been complied with and the office has adjudged a print or label registrable, a certificate will be issued, signed by the Commissioner of Patents under the seal of the Patent Office. Attached to the certificate will be a copy of the print or label.

33. A certificate of registration shall remain in force for 28 years from the date of first publication.

34. The certificate may be continued for a further term of 28 years upon filing a second application within one year prior to the expiration of the term of the original certificate and complying with all other regulations with regard to original applications.

ASSIGNMENTS.

35. Prints and labels are assignable in law by an instrument in writing signed by the proprietor. This should state the names of the assignee and assignor, the title of the print or label assigned, the date of filing the application, or, if registered, the date and number of the certificate, and should be dated.

COPIES AND PUBLICATIONS.

36. After a print or label has been registered, copies thereof may be furnished, when authorized by the commissioner, upon the payment of the fee.

37. The Official Gazette of the Patent Office will contain a list of all the prints and labels registered, with the name and address of the registrant in each case, the title of the print or label, and a statement of the particular goods to which it is to be applied, together with the date of filing the application.

FEES.

38.

On filing an application for registration of a print or label	$6.00
For manuscript copies of records, for every 100 words or fraction thereof	.10
If certified, for the certificate, additional	.25
For recording every assignment, power of attorney, or other paper, of 300 words or under	1.00
Of over 300 and under 1,000 words	2.00
For each additional 1,000 words or fraction thereof	1.00
For abstracts of title:	
For the search, one hour or less, and certificate	1.00
Each additional hour or fraction thereof	.50
For each brief from the digest of assignments, of 200 words or less	.20
Each additional 100 words or fraction thereof	.10
For searching titles or records, one hour or less	.50
Each additional hour or fraction thereof	.50
For single printed copy, when authorized by the commissioner	.05
If certified, for the grant, additional	.50
For the certificate	.25

39. The fee for registration of a print or label is to be paid to the Commissioner of Patents, or to the Treasurer or any of the assistant treasurers of the United States, or to any of the depositaries, national banks, or receivers of public money designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit therefor, which shall be transmitted to the Patent Office. When this can not be done without inconvenience, the money may be remitted by mail, and in every such case the letter should state the exact amount inclosed. All money orders and checks should be made payable to the "Commissioner of Patents."

40. All money sent by mail, either to or from the Patent Office, will be at the risk of the sender. All payments to the office must be made in specie, Treasury notes, national-bank notes, certified checks, or money orders.

REPAYMENT OF MONEY.

41. Upon refusal of the commissioner to register the print or label, and on application by the applicant or his duly authorized agent, the fee may be returned.

NOTICE OF COPYRIGHT.

42. It is necessary, in order to maintain an action for infringement of a copyright, that the claim of copyright be printed on each copy of the article protected. The wording of the notice is determined by the copyright statute, section 18.

APPENDIX C.

THE GERMAN PATENT LAW.

THE GERMAN PATENT LAW.

[Amendment, act 1891.]

ARTICLE I.

The following paragraphs are substituted for the paragraphs 1 to 40 of the imperial patent law of the 25th May, 1877. (Imperial Law Journal, p. 501.)

FIRST SECTION—PATENT RIGHT.

SECTION 1. Patents are granted for new inventions, which permit of an industrial exploitation. The exceptions are:

1. Inventions, the exploitation of which would be incompatible with the laws of good morals.

2. Inventions of articles of food, drinks and medicine as well as of substances manufactured by a chemical process, in so far as the inventions do not relate to a distinct process for manufacturing such articles.

SEC. 2. An invention is not considered as new, if at the date of filing the application according to the provision of this present law, the same has been so described in public prints, within the last century, or so publicly employed in the country (the German Empire), that the use of the same by other persons skilled in the art appears possible.

The official foreign patent specifications are only considered equal to public prints after the lapse of three months from the date of publication, in so far as the patent is applied for by the foreign patentee or his legal successor.

This exception refers, however, only to the official publications of those States, in which, according to a publication of the Imperial Chancellor in the Imperial Gazette, reciprocity is guaranteed.

SEC. 3. The first person applying for a patent according to the provisions of this law is entitled to claim the grant of the same. A subsequent application can not form the basis of a patent when the invention is the subject of the patent of the prior applicant. If this supposition is in part correct, the later applicant is only entitled to the grant of a correspondingly limited patent. The title of the applicant to the grant of a patent will not be allowed when the essential contents of his application are, without permission, taken from the descriptions, drawings, models, implements, or apparatus of another person, or from a process employed by the same and opposition is raised by such person.

If the withdrawal or rejection of the application is caused by the opposition, the opponent can, in case he files an application for his invention within one month from the receipt of the information of the decision of the patent office, claim that the day prior to the publication of the former invention be fixed as the date of his application.

SEC. 4. The operation of the patent is such that none but the patentee is authorized to make a business of the manufacture, to trade in, to offer for sale, or to use the subject of the invention.

If the patent is granted on a process, the operation of the same is extended to the direct products of the process.

SEC. 5. The patent has no effect against such persons who, at the date of filing the application by the patentee, had already employed the invention in the country (the German Empire) or made the necessary arrangements for using the same.

Such person is authorized to use the invention in his own or other workshops, according to the requirements of his own business.

This right can only be inherited or sold in connection with the trade or business in question.

The patent has further no effect when the invention is, by order of the chancellor of the Empire, used for the army or navy or for the public welfare.

The patentee is, however, in such case entitled to claim a suitable compensation from the Empire or the State which, in its special interest, brought in the motion for the limitation of the patent, which, if no arrangement is come to, will be settled by the courts of law.

Patents do not affect arrangements on vehicles or vessels which temporarily enter the country.

SEC. 6. The claim to the grant of the patent and the rights pertaining to the same, are inherited by the heirs of the patentee. The claim and the rights can, either restricted or unrestricted by contract or testamentary enactment, be transferred to other persons.

SEC. 7. The duration of a patent is 15 years, commencing from the day next following the date of application for the patent. If the invention relates to an improvement or further perfection of another invention patented by the applicant, the same can apply for a patent of addition, which terminates with the original patent.

If through the annulment of the original patent a patent of addition becomes an independent patent, the date of the priority of the original patent determines the duration of the same and the date when the annuities become due. The date of the patent of addition determines the amount of the annuity to be paid. The period between the date of application for the patent of addition and the next following commencement of a year of the life of the original patent, is considered as the first patent year of the patent of addition.

SEC. 8. A fee of 30 marks (£1 10s.) is payable before the grant of each patent (sec. 24, Sec. I).

With the exception of patents of addition (sec. 7), an annual tax must be paid on each patent at the commencement of the second and each of the succeeding years of the duration of the patent, amounting to 50 marks (£2 10s.) in the first case, and increasing by 50 marks (£2 10s.) each succeeding year. This tax or annuity (Sec. II) must be paid within six weeks after the same has become due. After the lapse of this respite, the annuity can only be paid within the next following six weeks on payment of a penalty of 10 marks.

A patentee who can prove that he is in necessitous circumstances, can be granted a respite for the first and second annuity up to the third year, and if the patent lapses in the third year, can be exempted from payment.

The annuities can be paid before the same have become due. If the patent is abandoned, declared void, or revoked, the annuities, which have not become due, are refunded.

The amount of the annuities can be reduced by enactment of the Federal Council.

SEC. 9. The patent lapses when the patentee abandons the same, or when the annuity is not paid in good time into the cash department of the patent office or handed over to a post office within the German Empire to be forwarded to the patent office.

SEC. 10. A patent will be declared null and void when it is proved:

1. That the invention was not patentable according to secs. 1 and 2;

2. That the invention was the subject of a patent of a prior applicant;

3. That the essential contents of the application were abstracted from the specifications, drawings, models, implements, or apparatus of another person, or from a process employed by the same.

If one of these suppositions (1 to 3) proves to be only partially the case, the part in question is declared void by a corresponding limitation of the patent.

SEC. 11. A patent can be revoked after the lapse of three years, calculated from the day after the publication (sec. 26, Sec. I) of the grant of the patent:

1. If the patentee neglects to work his invention in the country (the German Empire) to an adequate extent, or to do all that was requisite for securing the said working;

2. When it appears conducive to the public interest, that permission to use the invention be granted to others, and the patentee refuses to grant such permission for a suitable compensation and on good security.

SEC. 12. A person not residing in the country (the German Empire) is only then entitled to a patent grant and the rights proceeding from the same, when he has appointed a representative residing in the country (German Empire).

The latter is authorized to represent the patentee in all proceedings prescribed by this present law, as well as in all civil lawsuits and to enter criminal suits relating to the said patent.

The place where the representative has his domicile, and if such is wanting, the place where the patent office has its seat is, according to section 24 of the regulations of the civil law, considered the place of domicile of the property, id est, the patent rights.

With the consent of the Federal council, the chancellor of the Empire can enact, that the right of retaliation be exercised against the subjects or citizens of a foreign State.

SECOND SECTION—PATENT OFFICE.

SEC. 13. All grants, annulments, and revocations of patent, are effected by the patent office.

The patent office has its seat in Berlin and consists of a president, of members qualified for a judgeship or the higher administrative service (judicial members), and of members who are experts in some branch of industry (technical members).

The members are nominated by the Emperor, the president on the recommendation of the Federal Council. The appointment of the judicial members, when they occupy an office in imperial or state service, takes place for the duration of such office or for life. The appointment of the technical members takes place for life or for five years. In the latter case the clauses of section 16 of the law respecting the legal position of imperial officials, dated March 31, 1873, have no effect.

SEC. 14. In the patent office are formed:

1. Departments for patent applications (application departments).

2. A department for petitions for the annulment or revocation of patents (annulment department).

3. Departments for appeal cases (appeal departments).

In the application departments only such technical members may act which are appointed for life.

The technical members of the application departments may not act in the other departments, nor the technical members of the other departments in the application departments. The quorum of the application departments must consist of at least three members, of which two must be technical members.

The decisions of the annulment department and the appeal departments are given by a quorum consisting of two judicial and three technical members. For other decisions the presence of three members is sufficient.

The provisions of the code of civil law with regard to challenge or refusal of members of the court are applicable.

Experts who are not members may be summoned to attend the deliberations, but they are not permitted to take any part in the voting.

SEC. 15. The resolutions and decisions of the departments are given in the name of the patent office; the grounds are to be given, reduced to writing and officially delivered to all interested parties.

SEC. 16. Appeal can be entered against the decisions of the application departments and the annulment department. No member who took part in the decision appealed against may take part in the decision on such appeal.

SEC. 17. The formation of the departments, the determining of their duties, the mode of procedure, including the serving of the papers, and the order of business of the patent office, will be regulated by imperial enactment with the assent of the Federal Council in so far as they are not laid down in this present law.

SEC. 18. The patent office is bound to give an opinion on questions relating to patents when called upon by the law courts if, during a lawsuit, conflicting opinions have been given by several experts.

In other respects the patent office is not authorized to form resolutions, or give opinions beyond its legal sphere of business, without the consent of the Chancellor of the Empire.

SEC. 19. The patent office keeps a record of the subject and duration of patents granted, together with the name and address of the patentees and their representatives appointed at the filing of the application.

The commencement, expiration, abandonment, annulment, and revocation of patents are to be entered in these records and at the same time published in the Reichsanzeiger (Imperial Gazette).

If an alteration takes place in the owner of the patent or his representative, such alterations are also registered in the records if authentically brought to the cognizance of the patent office, and are published in the Reichsanzeiger (Imperial Gazette). So long as this is not done, the original patentee and representative remain in possession of the rights and liabilities according to the tenor of this law.

The examination of the records, specifications, drawings, models, and samples on which the grant of the patent was based is open to the public, in so far as it does not relate to a patent taken out in the name of the imperial administration for military or naval purposes. The patent office publishes the essential parts of the specifications and drawings in an official journal, in so far as the same are open to public inspection. The same official journal must also contain the publications which, according to the tenor of this law, are inserted in the Reichsanzeiger (Imperial Gazette).

THIRD SECTION—PROCEDURE IN PATENT MATTERS.

SEC. 20. The application for the grant of a patent is to be presented in writing to the patent office.

A separate application must be filed for each invention.

The application must contain the petition for the grant of a patent and a clear definition of the object to be protected by the said patent.

The invention is so to be described in an accompanying specification that the use of the same by other competent persons appears possible. At the end of the specification, that which is considered patentable, must be enumerated (claim). The requisite drawings, representations, models, and samples must be supplied.

The patent office issues regulations respecting the further requirements of the application. Alterations can be made in the specification up to the publication of the application. Twenty marks must be paid on application to defray the costs of the procedure.

SEC. 21. The application is subjected to a preliminary examination by a member of the application department.

If the application does not appear to comply with the prescribed requirements (sec. 20), the applicant will be duly notified and requested to make the desired amendments within a specified time.

If this preliminary examination shows that the application does not contain a patentable invention according to sections 1, 2, and 3, section I, the applicant is duly

informed of the same and the reasons given, at the same time demanding that the applicant replies within a specified time.

If the applicant does not reply in proper time to this preliminary decision, the application is considered as withdrawn; if he replies within the specified time, the application department forms its decision.

SEC. 22. If the application does not fulfill the prescribed requirements (sec. 20), or is found not to contain a patentable invention according to sections 1, 2, and 3, Section I, the application is rejected by the department. The member who promulgated the preliminary decision must not take part in forming this decision. If the case is rejected for reasons not communicated to the applicant in the preliminary decision, the opportunity must be given him to refute these grounds within a specified time.

SEC. 23. If the patent office considers the application to be in due order, and the grant of a patent admissible, the publication of the application is ordered.

From the date of the publication, the subject of the application will provisionally have the protection of a patent in favor of the applicant (secs. 4 and 5), the protection being calculated from the day next following the date of application.

The publication takes place in such manner that the name of the applicant and the essential contents of the application are advertised once in the Reichsanzeiger (Imperial Gazette) and also notice given that the subject of the application is provisorily protected against unauthorized use.

At the same time the application and all supplementary documents will be laid open to public inspection in the patent office.

According to the provisions of section 17 of the present law it can be enacted that the laying out of the papers can also take place out of Berlin.

The publication can, on the petition of the applicant, be deferred for the duration of at most six months from the date of the decision respecting the publication. The deferring of the publication up to a duration of three months may not be refused. If the application relates to a patent applied for in the name of the imperial administration for military or naval purposes, the patent is, on request, granted without any publication. In this case no entry is made in the rolls of the patent office.

SEC. 24. The first annuity (sec. 8, Sec. I) must be paid within the specified term of two months after the publication (sec. 23), otherwise the application will be considered as withdrawn. Within the like term opposition can be raised against the grant of the patent. The opposition must be filed in writing, giving the grounds, and can only be based on the assertion that the subject matter is not patentable according to sections 1 and 2, or that the applicant has no claim to the patent according to section 3. In case of section 3, Section II, the injured party alone can oppose the grant.

After the lapse of the term specified the patent office decides as to the grant of the patent.

The member who promulgated the preliminary decision (sec. 21) must not take part in forming this decision.

SEC. 24a. During the preliminary examination and in the procedure before the application department, the interested parties can at any time be subpœnaed and heard, witnesses and experts examined, and other requisite inquiries be ordered, in order to clear up the matter.

SEC. 25. The applicant can enter an appeal against the decision in which the application is rejected, and the applicant or the opposing party, against the decision respecting the grant of the patent, within one calendar month after receipt of the said decision.

The sum of 20 marks must be paid on filing the appeal, to defray the costs of the appeal procedure. If this payment is not made, the appeal is considered as not raised. If the appeal is not admissible, or filed too late, the same will be rejected as not allowable. If the appeal is found admissible, the further procedure is carried out according

to section 24a. The subpœnaing and hearing of the interested parties must take place on the petition of one of the same.

This petition can only be rejected when the subpœnaing of the petitioner had already taken place in the procedure before the application department. If the decision respecting the appeal is to be given for other reasons than those given in the decision appealed against, the interested parties must be allowed the opportunity of being heard respecting the same.

The patent office can decide, according to its own free judgment, as to what extent the losing party has to pay the costs of the appeal procedure, and also enact that the fee (Sec. I) be refunded to the party whose appeal has been found to be just.

SEC. 26. If it is definitely decided to grant a patent, the patent office publishes a notice to that effect in the Reichsanzeiger (Imperial Gazette) and prepares a title deed for the patentee.

If the application is withdrawn after publication (sec. 23), or if the patent is refused, the same is also to be made public. The paid-up annuity is in these cases refunded. On such rejection the provisional protection is considered as if it had not been in force.

SEC. 27. The commencement of proceedings for annulment or revocation of a patent takes place only on petition.

In cases coming under section 10, Section III, the injured party alone has the right to file the petition.

In cases coming under section 10, Section I, the petition is not admissible after the lapse of five years, calculated from the date when the grant of the patent was published (sec. 26, Sec. I).

The petition must be addressed in writing to the patent office and must state the facts on which it is based. On filing the petition a fee of 50 marks must be paid. If this payment is not made, the petition is considered as not filed.

The fee is returned if the procedure is settled without hearing the interested parties.

If the petitioner resides abroad, the same must, at the demand of the opponent, deposit security for the costs of the procedure.

The amount of this security is fixed by the patent office according to its judgment.

When security is ordered to be deposited, the petitioner is given a stipulated time within which the same must be deposited.

If the security is not deposited before the lapse of the stipulated time, the petition will be considered as withdrawn.

SEC. 28. After the commencement of the procedure has been ordered, the patent office communicates the petition to the patentee and calls on him for a declaration respecting the same, within one calendar month.

If the patentee fails to make such declaration within the stipulated term, the matter can be decided according to the petition and the facts asserted by the petitioner be considered as proved, without summoning the interested parties.

SEC. 29. If the patentee replies in good time, or if according to section 28, Section II, the decision is not immediately given according to the petition, the patent office issues the necessary orders for clearing up the matter, and, in the first case, communicates the reply to the petitioner.

The patent office can order the hearing of witnesses and experts. This is carried out according to the provisions of the civil-law regulations. The minutes of the case are to be reduced to writing by a sworn clerk.

The decision is given after summoning and hearing the interested parties.

If the revocation of the patent according to section 11, Section II, is petitioned for, the decision must be preceded by a warning, threatening the revocation of the patent, giving the grounds for the same and allowing a suitable respite.

SEC. 30. In the decision (secs. 28 and 29) it is left entirely in the hands of the patent office to determine the proportion of the costs of the procedure to be borne by the interested parties.

SEC. 31. The law courts are, on requisition, bound to render the patent office legal assistance.

The courts can be called upon to fix the penalty for witnesses and experts who fail to appear, who refuse to give evidence, or to swear to the same, or to enforce the appearance of witnesses who fail to appear.

SEC. 32. Appeals can be entered against the decisions of the patent office (secs. 28 and 29).

The appeal is forwarded to the imperial supreme court and must be notified to the patent office in writing, within six weeks after receipt of the decision, and the grounds given.

The costs of the proceedings according to section 30 are also to be determined by the verdict of the court. The procedure before the court is otherwise determined by a regulation to be drawn up by the court and established by imperial enactment with the assent of the Federal Council.

SEC. 33. With respect to the official language to be used in the patent office, the provisions of the judicature act respecting the language to be used in court are to be applied.

Applications which are not in the German language will not be taken into consideration.

SEC. 34. Whosoever knowingly, or through gross carelessness, makes use of an invention contrary to the provisions of sections 4 and 5, is bound to indemnify the injured party. If the case relates to an invention, the subject of which is a process for manufacturing a new material, all materials of like nature are considered as made according to the new process, until proof is produced to the contrary.

FOURTH SECTION—PENALTIES AND DAMAGES.

SEC. 35. Whosoever knowingly makes use of an invention contrary to the provisions of sections 4 and 5, will be punished with a fine up to 5,000 marks or imprisonment not exceeding one year. The prosecution is only instituted on petition. The petition can be withdrawn. If a verdict is given in the criminal procedure, the injured party shall have the right to publish the sentence at the expense of the condemned party.

The kind of publication and the stipulated time for the same is to be fixed in the verdict.

SEC. 36. In lieu of all damages arising according to the present law, the injured party may, besides the penalty, demand an amercement not exceeding 10,000 marks. The condemned are liable for this amercement as joint debtors.

Such acknowledged amercement precludes all further rights to claim damages.

SEC. 37. In civil law suits, in which, by suit or counter plea, a claim is made, founded on the provisions of this act, the procedure and decision in the highest instance must be delegated to the imperial court, according to section 8 of the introduction to the judicature act (Gerichtsverfassungsgesetz).

SEC. 38. Actions respecting infringements of patent rights become superannuated, with reference to each single act on which the said action is based, in three years.

SEC. 39. The court decides according to the open conviction of the same under due consideration of all the circumstances of the case, if damages have arisen, and assesses the amount of the same.

SEC. 40. A fine up to 1,000 marks (£50) will be imposed upon:

1. Those who provide objects or the packing of the same with a mark liable to raise the belief that such objects are protected by a patent according to the tenor of this law;

2. Those who use a mark or sign in public advertisements on signboards, business cards, or similar notices, which is likely to raise the belief that the objects mentioned therein are protected by a patent according to the tenor of this present law.

ARTICLE II.

The provisions of section 27, Section III of Article I, can be applied to the patents existing at the present time, on the condition that the petition for annulment of the same is admissible, at least during the space of three years from the day on which this act comes in force.

ARTICLE III.

This act comes in force on the 1st October, 1891.

GERMAN PATENT LAW RELATING TO DESIGNS.

ACT Relating to the protection of useful designs.

We, Wilhelm, by the grace of God, German Emperor, King of Prussia, etc., enact, in the name of the Empire, after receiving the assent of the Federal Council and Imperial Parliament, as follows:

SECTION 1. Models of implements, or useful articles, or parts of the same, are protected according to the tenor of this act as useful models, in so far as the same can be applied for the purpose of manufacture or utility, in consequence of the novel form or configuration, novel arrangement, or a novel device.

Models are not considered as new, if at the date of filing the same according to the provisions of this present act, they have been already described in public prints or publicly used in the country (German Empire).

SEC. 2. Models, for which protection as useful designs is requested, are to be notified in writing to the patent office. The application must state under what title the model is to be entered and for what purpose of manufacture or utility the new form or device is intended to be applied.

A copy or representation of the model must accompany each and every application.

The patent office will issue regulations respecting the further requirements of the application. A fee of 15 marks must be paid on application for each and every model filed.

SEC. 3. If the application fulfills the requirements of section 2, the patent office decrees that the same be entered on the records for useful designs.

The entries are to be published in fixed periods of time in the Imperial Gazette (Reichsanzeiger).

Alterations in the person entered in the records will, on petition, be entered in the same.

The examination of the records and also of the application according to which the entry was made is open to the public.

SEC. 4. The operation of the entry of a useful design according to the tenor of section 1 is, that the person entered on the records, when he is the first applicant for the model, has the exclusive right to make an industry of the copying of the model, to trade in, offer for sale, or to use the implements or articles produced by copying said model.

Rights based on a subsequent application may not be carried into effect, if the same infringe the rights based on a prior application, with the permission of the proprietor of the latter.

If the essential contents of the entry are, without consent, taken from the descriptions, drawings, models, implements, or devices of another person, the protection of the act shall have no effect against the injured party.

SEC. 5. If a privilege founded on section 4 infringes a patent, the application for which was filed prior to the application for the model, the party entered on the design records may not make use of such privilege without permission of the patentee.

On the other hand, if a privilege founded on section 4 is infringed by a patent filed subsequent to the former, the rights granted by the said patent can not be made use of, without consent of the party entered on the records of useful designs.

SEC. 6. If the requirements of section 1 have not been fulfilled, any person can claim, from the proprietor of the entry, that the useful design be canceled.

In the case of section 4, paragraph 3, the injured party can claim the cancellation of the design.

SEC. 7. The rights based on the entry in the records are inherited by the heirs and can, either restricted or unrestricted by contract or testamentary enactment, be transferred to other persons.

SEC. 8. The duration of the protection is three years, the duration of this period beginning with the day following the application. On a further payment of 60 marks (£3), before the lapse of the first period of three years, the protection will be prolonged for further three years. The prolongation will be noted in the records. If the person entered in the records renounces the protection during the protection period, the entry will be canceled.

The cancellation of entries not made in consequence of the lapse of the protection, is to be published as stipulated in section 3.

SEC. 8a. Each piece of the articles of utility protected according to this act must bear the signature "Gesetzlich geschutzt" (under legal protection).

Whosoever shall omit to apply this signature loses the right to claim damages as granted him according to sections 9 and 11.

SEC. 9. Whosoever knowingly, or through gross carelessness, makes use of a useful design contrary to the provisions of the sections 4 and 5 is bound to indemnify the injured party. Actions respecting infringements of the protection rights become superannuated with reference to each single act, on which the said action is based, in three years.

SEC. 10. Whosoever knowingly makes use of a useful design contrary to the provisions of sections 4 and 5 will be punished with a fine up to 5,000 marks (£250) or imprisonment not exceeding one year. The prosecution is only instituted on petition. The petition can be withdrawn. If a verdict is given in the criminal procedure, the injured party shall have the right to publish the sentence, at the expense of the condemned party. The kind of publication and the stipulated time for the same is to be fixed in the verdict.

SEC. 11. In lieu of all damages arising according to the present act, the injured party may, besides the penalty, demand an amercement not exceeding 10,000 marks (£500).

The condemned are liable for this amercement as joint debtors. Such acknowledged amercement precludes all further right to claim damages.

SEC. 12. In civil law suits in which by suit or counterplea a claim is made founded on the provisions of this act, the procedure and decision in the highest instance must be delegated to the imperial court (Reichsgericht) according to section 8 of the introduction to the judicature act (Gerichtsverfassungsgesetz).

SEC. 13. A person not residing or having a domicile in the country (the German Empire) is only then entitled to protection under the present act, when in the State in which he resides or has his domicile, German useful designs enjoy protection, according to a notice published in the Imperial Law Journal (Reichsgesetzblatt).

Whosoever files an application based on this clause must at the same time appoint a representative residing in the country (German Empire). The name and residence of the representative are entered in the records.

The registered representative is authorized to represent the person owning protection in all law suits respecting useful designs and can also enter criminal proceedings.

The place where the representative has his domicile, and if such is wanting, the place where the patent office has its seat is, according to section 24 of the regulations of the civil law, considered the place of domicile of the property, id est, the design protection.

SEC. 14. The requisite regulations respecting the arrangement and the business routine of the patent office for carrying this act into effect will be made by imperial enactment by consent of the Federal Council.

SEC. 15. This act comes in force on the 1st of October, 1891.

APPENDIX D.

THE ENGLISH PATENT LAW.

I. THE LAW RELATING TO PATENTS AND DESIGNS.
II. PROCEDURE IN REGISTRATION OF TRADE-MARKS.
III. ORGANIZATION AND PERSONNEL.
IV. BUILDING ACCOMMODATIONS.

THE ENGLISH PATENT LAW.

I. The Law of Great Britain Relating to Patents and Designs.

Chapter 29.—AN ACT To consolidate the enactments relating to Patents for Inventions and the Registration of Designs and certain enactments relating to Trade-Marks. [28th Aug., 1907.]

Be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Part I.—*Patents.*

APPLICATION FOR AND GRANT OF PATENT.

1. (1) An application for a patent may be made by any person who claims to be the true and first inventor of an invention, whether he is a British subject or not, and whether alone or jointly with any other person.

(2) The application must be made in the prescribed form, and must be left at, or sent by post to, the patent office in the prescribed manner.

(3) The application must contain a declaration to the effect that the applicant is in possession of an invention, whereof he, or in the case of a joint application one at least of the applicants, claims to be the true and first inventor, and for which he desires to obtain a patent, and must be accompanied by either a provisional or complete specification.

(4) The declaration required by this section may be either a statutory declaration or not, as may be prescribed.

2. (1) A provisional specification must describe the nature of the invention.

(2) A complete specification must particularly describe and ascertain the nature of the invention and the manner in which the same is to be performed.

(3) In the case of any provisional or complete specification where the comptroller deems it desirable he may require that suitable drawings shall be supplied with the specification, or at any time before the acceptance of the same, and such drawings shall be deemed to form part of the said specification.

(4) A specification, whether provisional or complete, must commence with the title, and in the case of a complete specification must end with a distinct statement of the invention claimed.

(5) Where the invention in respect of which an application is made is a chemical invention, such typical samples and specimens as may be prescribed shall, if in any particular case the comptroller considers it desirable so to require, be furnished before the acceptance of the complete specification.

3. (1) The comptroller general of patents, designs, and trade-marks (hereinafter referred to as the comptroller) shall refer every application to an examiner.

(2) If the examiner reports that the nature of the invention is not fairly described, or that the application, specification, or drawings have not been prepared in the prescribed manner, or that the title does not sufficiently indicate the subject matter of the invention, the comptroller may refuse to accept the application or require that the application, specification, or drawings be amended before he proceeds with the application; and in the latter case the application shall, if the comptroller so directs, bear date as from the time when the requirement is complied with.

(3) Where the comptroller refuses to accept an application or requires an amendment, the applicant may appeal from his decision to the law officer, who shall, if required, hear the applicant and the comptroller, and may make an order determining whether and subject to what conditions (if any) the application shall be accepted.

(4) The comptroller shall, when an application has been accepted, give notice thereof to the applicant.

4. Where an application for a patent in respect of an invention has been accepted, the invention may during the period between the date of the application and the date of sealing such patent be used and published without prejudice to the patent to be granted for the invention; and such protection from the consequences of use and publication is in this act referred to as provisional protection.

5. (1) If the applicant does not leave a complete specification with his application, he may leave it at any subsequent time within six months from the date of the application: *Provided*, That where an application is made for an extension of the time, for leaving a complete specification, the comptroller shall, on payment of the prescribed fee, grant an extension of time to the extent applied for but not exceeding one month.

(2) Unless a complete specification is so left the application shall be deemed to be abandoned.

6. (1) Where a complete specification is left after a provisional specification, the comptroller shall refer both specifications to an examiner.

(2) If the examiner reports that the complete specification has not been prepared in the prescribed manner, the comptroller may refuse to accept the complete specification until it has been amended to his satisfaction.

(3) If the examiner reports that the invention particularly described in the complete specification is not substantially the same as that which is described in the provisional specification the comptroller may—

(*a*) refuse to accept the complete specification until it has been amended to his satisfaction; or

(*b*) (with the consent of the applicant) cancel the provisional specification and treat the application as having been made on the date at which the complete specification was left, and the application shall have effect as if made on that date:

Provided, That where the complete specification includes an invention not included in the provisional specification, the comptroller may allow the original application to proceed so far as the invention included both in the provisional and in the complete specification is concerned, and treat the claim for the additional invention included in the complete specification as an application for that invention made on the date at which the complete specification was left.

(4) A refusal of the comptroller to accept a complete specification shall be subject to appeal to the law officer, who shall, if required, hear the applicant and the comptroller and may make an order determining whether and subject to what conditions (if any) the complete specification shall be accepted.

(5) Unless a complete specification is accepted within twelve months from the date of the application, the application shall (except where an appeal has been lodged) become void: *Provided*, That where the application is made for an extension of time for the acceptance of a complete specification, the comptroller shall, on payment of the prescribed fee, grant an extension of time to the extent applied for but not exceeding three months.

7. (1) Where an application for a patent has been made and a complete specification has been left, the examiner shall, in addition to the other inquiries which he is directed to make by this act, make a further investigation for the purpose of ascertaining whether the invention claimed has been wholly or in part claimed or described in any specification (other than a provisional specification not followed by a complete specification) published before the date of the application, and left pursuant to any

application for a patent made in the United Kingdom within fifty years next before the date of the application.

(2) If on investigation it appears that the invention has been wholly or in part claimed or described in any such specification, the applicant shall be informed thereof, and the applicant may, within such time as may be prescribed, amend his specification, and the amended specification shall be investigated in like manner as the original specification.

(3) If the comptroller is satisfied that no objection exists to the specification on the ground that the invention claimed thereby has been wholly or in part claimed or described in a previous specification as before mentioned, he shall, in the absence of any other lawful ground of objection, accept the specification.

(4) If the comptroller is not so satisfied, he shall, after hearing the applicant, and unless the objection is removed by amending the specification to the satisfaction of the comptroller, determine whether a reference to any, and, if so, what prior specifications ought to be made in the specification by way of notice to the public: *Provided*, That the comptroller, if satisfied that the invention claimed has been wholly and specifically claimed in any specification to which the investigation has extended, may, in lieu of requiring references to be made in the applicant's specification as aforesaid, refuse to grant a patent.

(5) An appeal shall lie from the decision of the comptroller under this section to the law officer.

(6) The investigations and reports required by this section shall not be held in any way to guarantee the validity of any patent, and no liability shall be incurred by the board of trade or any officer thereof by reason of or in connection with any such investigation or report or any proceeding consequent thereon.

8. (1) An investigation under the last preceding section shall extend to specifications published after the date of the application in respect of which the investigation is made, and being specifications which have been deposited pursuant to prior application; and that section shall, subject to rules under this act, have effect accordingly.

(2) Where, on such an extended investigation, it appears that the invention claimed in the specification deposited pursuant to an application is wholly or in part claimed in any published specification deposited pursuant to a prior application, the applicant shall, whether or not his specification has been accepted or a patent granted to him, be afforded such facilities as may be prescribed for amending his specification, and in the event of his failing to do so the comptroller shall, in accordance with such procedure as may be prescribed, determine what reference if any to other specifications ought to be made in his specification by way of notice to the public.

(3) For the purposes of this section an application shall be deemed to be prior to another application if the patent applied for when granted would be of prior date to the patent granted pursuant to that other application.

(4) This section shall come into operation at such date as the board of trade may by order direct, and shall apply only to applications made after that date, and the order shall be laid before both Houses of Parliament.

9. On the acceptance of the complete specification the comptroller shall advertise the acceptance, and the application and specifications with the drawings (if any) shall be open to public inspection.

10. After the acceptance of a complete specification and until the date of sealing a patent in respect thereof, or the expiration of the time for sealing, the applicant shall have the like privileges and rights as if a patent for the invention had been sealed on the date of the acceptance of the complete specification: *Provided*, That an applicant shall not be entitled to institute any proceeding for infringement until a patent for the invention has been granted to him.

11. (1) Any person may at any time within two months from the date of the advertisement of the acceptance of a complete specification give notice at the patent office of opposition to the grant of the patent on any of the following grounds:

(*a*) That the applicant obtained the invention from him or from a person of whom he is the legal representative; or

(*b*) That the invention has been claimed in any complete specification for a British patent which is or will be of prior date to the patent the grant of which is opposed, other than a specification deposited pursuant to an application made more than fifty years before the date of the application for such last-mentioned patent; or

(*c*) That the nature of the invention or the manner in which it is to be performed is not sufficiently or fairly described and ascertained in the complete specification; or

(*d*) That the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification, but on no other ground.

(2) Where such notice is given the comptroller shall give notice of the opposition to the applicant, and shall, on the expiration of those two months, after hearing the applicant and the opponent, if desirous of being heard, decide on the case.

(3) The decision of the comptroller shall be subject to appeal to the law officer, who shall, if required, hear the applicant and the opponent, if the opponent is in his opinion a person entitled to be heard in opposition to the grant of the patent, and shall decide the case, and the law officer may if he thinks fit obtain the assistance of an expert who shall be paid such remuneration as the law officer with the consent of the treasury may determine.

12. (1) If there is no opposition, or, in case of opposition, if the determination is in favor of the grant of a patent, a patent shall on payment of the prescribed fee be granted to the applicant, or in the case of a joint application to the applicants jointly, and the comptroller shall cause the patent to be sealed with the seal of the patent office.

(2) A patent shall be sealed as soon as may be and not after the expiration of fifteen months from the date of application, provided that—

(*a*) Where the comptroller has allowed an extension of the time within which a complete specification may be left or accepted, a further extension of four months after the said fifteen months shall be allowed for the sealing of the patent;

(*b*) Where the sealing is delayed by an appeal to the law officer or by opposition to the grant of the patent, the patent may be sealed at such time as the law officer may direct;

(*c*) Where the patent is granted to the legal representative of an applicant who has died before the expiration of the time which would otherwise be allowed for sealing the patent, the patent may be sealed at any time within twelve months after the date of his death;

(*d*) Where in consequence of the neglect or failure of the applicant to pay any fee a patent can not be sealed within the period allowed by this section, that period may, on payment of the prescribed fee and on compliance with the prescribed conditions, be extended to such an extent as may be prescribed, and this provision shall, in such cases as may be prescribed and subject to the prescribed conditions, apply where the period allowed for the sealing of the patent has expired before the commencement of this act.

13. Except as otherwise expressly provided by this act, a patent shall be dated and sealed as of the date of the application: *Provided*, That no proceedings shall be taken in respect of an infringement committed before the publication of the complete specification.

14. (1) A patent sealed with the seal of the patent office shall have the same effect as if it were sealed with the Great Seal of the United Kingdom, and shall have effect

throughout the United Kingdom and the Isle of Man: *Provided*, That a patentee may assign his patent for any place in or part of the United Kingdom or Isle of Man as effectually as if the patent were originally granted to extend to that place or part only.

(2) Every patent may be in the prescribed form and shall be granted for one invention only, but the specification may contain more than one claim, and it shall not be competent for any person in an action or other proceeding to take any objection to a patent on the ground that it has been granted for more than one invention.

15. (1) A patent granted to the true and first inventor shall not be invalidated by an application in fraud of him, or by provisional protection obtained thereon, or by any use or publication of the invention subsequent to that fraudulent application during the period of provisional protection.

(2) Where a patent has been revoked on the ground of fraud the comptroller may, on the application of the true inventor made in accordance with the provisions of this act, grant to him a patent in lieu of and bearing the same date as the patent so revoked: *Provided*, That no action shall be brought for any infringement of the patent so granted committed before the actual date when such patent was granted.

16. (1) Where the same applicant has put in two or more provisional specifications for inventions which are cognate or modifications one of the other and has obtained thereby concurrent provisional protection for the same and the comptroller is of opinion that the whole of such inventions are such as to constitute a single invention and may properly be included in one patent, he may accept one complete specification in respect of the whole of such applications and grant a single patent thereon.

(2) Such patent shall bear the date of the earliest of such applications, but in considering the validity of the same and for the purpose of the provisions of this act with respect to oppositions to the grant of patents, the court or the comptroller, as the case may be, shall have regard to the respective dates of the provisional specifications relating to the several matters claimed therein.

TERM OF PATENT.

17. (1) The term limited in every patent for the duration thereof shall, save as otherwise expressly provided by this act, be fourteen years from its date.

(2) A patent shall, notwithstanding anything therein or in this act, cease if the patentee fails to pay the prescribed fees within the prescribed times: *Provided*, That the comptroller, upon the application of the patentee, shall, on receipt of such additional fee, not exceeding ten pounds, as may be prescribed, enlarge the time to such an extent as may be applied for but not exceeding three months.

(3) If any proceeding is taken in respect of an infringement of the patent committed after a failure to pay any fee within the prescribed time, and before any enlargement thereof, the court before which the proceeding is proposed to be taken may, if it thinks fit, refuse to award any damages in respect of such infringement.

18. (1) A patentee may, after advertising in manner provided by rules of the supreme court his intention to do so, present a petition to the court praying that his patent may be extended for a further term, but such petition must be presented at least six months before the time limited for the expiration of the patent.

(2) Any person may give notice to the court of objection to the extension.

(3) On the hearing of any petition under this section the patentee and any person who has given such notice of objection shall be made parties to the proceeding, and the comptroller shall be entitled to appear and be heard, and shall appear if so directed by the court.

(4) The court, in considering its decision, shall have regard to the nature and merits of the invention in relation to the public, to the profits made by the patentee as such, and to all the circumstances of the case.

(5) If it appears to the court that the patentee has been inadequately remunerated by his patent, the court may by order extend the term of the patent for a further term

not exceeding seven, or, in exceptional cases, fourteen years, or may order the grant of a new patent for such term as may be specified in the order and containing any restriction, conditions, and provisions the court may think fit.

19. (1) Where a patent for an invention has been applied for or granted, and the applicant or the patentee, as the case may be, applies for a further patent in respect of any improvement in or modification of the invention, he may, if he thinks fit, in his application for the further patent, request that the term limited in that patent for the duration thereof be the same as that of the original patent or so much of that term as is unexpired.

(2) Where an application containing such a request is made, a patent (hereinafter referred to as a patent of addition) may be granted for such term as aforesaid.

(3) A patent of addition shall remain in force so long as the patent for the original invention remains in force, but no longer, and in respect of a patent of addition no fees shall be payable for renewal.

(4) The grant of a patent of addition shall be conclusive evidence that the invention is a proper subject for a patent of addition, and the validity of the patent shall not be questioned on the ground that the invention ought to have been the subject of an independent patent.

RESTORATION OF LAPSED PATENTS.

20. (1) Where any patent has become void owing to the failure of the patentee to pay any prescribed fee within the prescribed time, the patentee may apply to the comptroller in the prescribed manner for an order for the restoration of the patent.

(2) Every such application shall contain a statement of the circumstances which have led to the omission of the payment of the prescribed fee.

(3) If it appears from such statement that the omission was unintentional and that no undue delay has occurred in the making of the application, the comptroller shall advertise the application in the prescribed manner, and within such time as may be prescribed any person may give notice of opposition at the patent office.

(4) Where such notice is given the comptroller shall notify the applicant thereof.

(5) After the expiration of the prescribed period the comptroller shall hear the case and, subject to an appeal to the court, issue an order either restoring the patent or dismissing the application: *Provided*, That in every order under this section restoring a patent such provisions as may be prescribed shall be inserted for the protection of persons who may have availed themselves of the subject-matter of the patent after the patent had been announced as void in the illustrated official journal.

AMENDMENT OF SPECIFICATION.

21. (1) An applicant or a patentee may at any time, by request in writing left at the patent office, seek leave to amend his specification, including drawings forming part thereof, by way of disclaimer, correction, or explanation, stating the nature of, and the reasons for, the proposed amendment.

(2) The request and the nature of the proposed amendment shall be advertised in the prescribed manner, and at any time within one month from its first advertisement any person may give notice at the patent office of opposition to the amendment.

(3) Where such a notice is given the comptroller shall give notice of the opposition to the person making the request, and shall hear and decide the case.

(4) Where no notice of opposition is given, or the person so giving notice of opposition does not appear, the comptroller shall determine whether and subject to what conditions, if any, the amendment ought to be allowed.

(5) The decision of the comptroller in either case shall be subject to an appeal to the law officer, who shall, if required, hear the person making the request to amend and, where notice of opposition has been given, the person giving that notice, if he is, in the opinion of the law officer, entitled to be heard in opposition to the request,

and, where there is no opposition, the comptroller, and may make an order determining whether and subject to what conditions (if any) the amendment ought to be allowed.

(6) No amendment shall be allowed that would make the specification, as amended, claim an invention substantially larger than or substantially different from the invention claimed by the specification as it stood before amendment.

(7) Leave to amend shall be conclusive as to the right of the party to make the amendment allowed, except in case of fraud; and the amendment shall be advertised in the prescribed manner, and shall in all courts and for all purposes be deemed to form part of the specification.

(8) This section shall not apply when and so long as any action for infringement or proceeding before the court for the revocation of a patent is pending.

22. In any action for infringement of a patent or proceedings before a court for the revocation of a patent the court may by order allow the patentee to amend his specification by way of disclaimer in such manner, and subject to such terms as to costs, advertisements, or otherwise, as the court may think fit: *Provided*, That no amendment shall be so allowed that would make the specification, as amended, claim an invention substantially larger than, or substantially different from, the invention claimed by the specification as it stood before the amendment, and where an application for such an order is made to the court notice of the application shall be given to the comptroller, and the comptroller shall have the right to appear and be heard, and shall appear if so directed by the court.

23. Where an amendment of a specification by way of disclaimer, correction, or explanation, has been allowed under this act, no damages shall be given in any action in respect of the use of the invention before the disclaimer, correction, or explanation, unless the patentee establishes to the satisfaction of the court that his original claim was framed in good faith and with reasonable skill and knowledge.

COMPULSORY LICENSES AND REVOCATION.

24. (1) Any person interested may present a petition to the board of trade, alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied, and praying for the grant of a compulsory license, or, in the alternative, for the revocation of the patent.

(2) The board of trade shall consider the petition, and if the parties do not come to an arrangement between themselves, the board of trade, if satisfied that a prima facie case has been made out, shall refer the petition to the court, and, if the board are not so satisfied, they may dismiss the petition.

(3) Where any such petition is referred by the board of trade to the court, and it is proved to the satisfaction of the court that the reasonable requirements of the public with reference to the patented invention have not been satisfied, the patentee may be ordered by the court to grant licenses on such terms as the court may think just, or, if the court is of opinion that the reasonable requirements of the public will not be satisfied by the grant of licenses, the patent may be revoked by order of the court: *Provided*, That an order of revocation shall not be made before the expiration of three years from the date of the patent, or if the patentee gives satisfactory reasons for his default.

(4) On the hearing of any petition under this section the patentee and any person claiming an interest in the patent, as exclusive licensee or otherwise, shall be made parties to the proceeding, and the law officer or such other counsel as he may appoint shall be entitled to appear and be heard.

(5) For the purposes of this section the reasonable requirements of the public shall not be deemed to have been satisfied—

(*a*) if by reason of the default of the patentee to manufacture to an adequate extent and supply on reasonable terms the patented article, or any parts thereof which are

necessary for its efficient working, or to carry on the patented process to an adequate extent or to grant licenses on reasonable terms, any existing trade or industry, or the establishment of any new trade or industry in the United Kingdom is unfairly prejudiced, or the demand for the patented article or the article produced by the patented process is not reasonably met; or

(*b*) if any trade or industry in the United Kingdom is unfairly prejudiced by the conditions attached by the patentee before or after the passing of this act to the purchase, hire, or use of the patented article or to the using or working of the patented process.

(6) An order of the court directing the grant of any license under this section shall, without prejudice to any other method of enforcement, operate as if it were embodied in a deed granting a license and made between the parties to the proceeding.

25. (1) Revocation of a patent may be obtained on petition to the court.

(2) Every ground on which—

(*a*) a patent might, immediately before the first day of January, one thousand eight hundred and eighty-four, have been repealed by scire facias; or

(*b*) a patent may be revoked under this act either by the comptroller or as an alternative to the grant of a compulsory license;

shall be available by way of defense to an action of infringement and shall also be a ground of revocation under this section.

(3) A petition for revocation of a patent may be presented—

(*a*) by the attorney general or any person authorized by him; or

(*b*) by any person alleging—(i) that the patent was obtained in fraud of his rights, or of the rights of any person under or through whom he claims; or (ii) that he, or any person under or through whom he claims, was the true inventor of any invention included in the claim of the patentee; or (iii) that he, or any person under or through whom he claims an interest in any trade, business, or manufacture, had publicly manufactured, used, or sold, within this realm, before the date of the patent, anything claimed by the patentee as his invention.

26. (1) Any person who would have been entitled to oppose the grant of a patent, or is the successor in interest of a person who was so entitled, may, within two years from the date of the patent, in the prescribed manner apply to the comptroller for an order revoking the patent on any one or more of the grounds on which the grant of the patent might have been opposed: *Provided*, That when an action for infringement or proceedings for the revocation of the patent are pending in any court, an application under this section shall not be made except with the leave of the court.

(2) The comptroller shall give notice of the application to the patentee, and after hearing the parties, if desirous of being heard, may make on order revoking the patent or requiring the specification relating thereto to be amended by disclaimer, correction, or explanation, or dismissing the application; but the comptroller shall not make an order revoking the patent unless the circumstances are such as would have justified him in refusing to grant the patent had the proceedings been proceedings in an opposition to the grant of a patent.

(3) A patentee may at any time by giving notice in the prescribed manner to the comptroller offer to surrender his patent, and the comptroller may, if after giving notice of the offer and hearing all parties who desire to be heard he thinks fit, accept the offer, and thereupon make an order for the revocation of the patent.

(4) Any decision of the comptroller under this section shall be subject to appeal to the court.

27. (1) At any time not less than four years after the date of a patent and not less than one year after the passing of this act, any person may apply to the comptroller for the revocation of the patent on the ground that the patented article or process is manufactured or carried on exclusively or mainly outside the United Kingdom.

(2) The comptroller shall consider the application, and if after inquiry he is satisfied that the allegations contained therein are correct, then, subject to the provisions of this section, and unless the patentee proves that the patented article or process is manufactured or carried on to an adequate extent in the United Kingdom, or gives satisfactory reasons why the article or process is not so manufactured or carried on, the comptroller may make an order revoking the patent either—

(*a*) forthwith; or

(*b*) after such reasonable interval as may be specified in the order, unless in the meantime it is shown to his satisfaction that the patented article or process is manufactured or carried on within the United Kingdom to an adequate extent:

Provided, That no such order shall be made which is at variance with any treaty, convention, arrangement, or engagement with any foreign country or British possession.

(3) If within the time limited in the order the patented article or process is not manufactured or carried on within the United Kingdom to an adequate extent, but the patentee gives satisfactory reasons why it is not so manufactured or carried on, the comptroller may extend the period mentioned in the previous order for such period not exceeding twelve months as may be specified in the subsequent order.

(4) Any decision of the comptroller under this section shall be subject to appeal to the court, and on any such appeal the law officer or such other counsel as he may appoint shall be entitled to appear and be heard.

REGISTER OF PATENTS.

28. (1) There shall be kept at the patent office a book called the register of patents, wherein shall be entered the names and addresses of grantees of patents, notifications of assignments and of transmissions of patents, of licenses under patents, and of amendments, extensions, and revocations of patents, and such other matters affecting the validity or proprietorship of patents as may be prescribed.

(2) The register of patents existing at the commencement of this act shall be incorporated with and form part of the register of patents under this act.

(3) The register of patents shall be prima facie evidence of any matters by this act directed or authorized to be inserted therein.

(4) Copies of deeds, licenses, and any other documents affecting the proprietorship in any letters patent or in any license thereunder, must be supplied to the comptroller in the prescribed manner for filing in the patent office.

CROWN.

29. A patent shall have to all intents the like effect as against His Majesty the King as it has against a subject: *Provided*, That any Government department may, by themselves, their agents, contractors, or others, at any time after the application, use the invention for the services of the Crown on such terms as may, either before or after the use thereof, be agreed on, with the approval of the treasury, between the department and the patentee, or, in default of agreement, as may be settled by the treasury after hearing all parties interested.

30. (1) The inventor of any improvement in instruments or munitions of war may (either for or without valuable consideration) assign to the secretary of state for war or the Admiralty on behalf of His Majesty all the benefit of the invention and of any patent obtained or to be obtained for the invention; and the secretary of state or the Admiralty may be a party to the assignment.

(2) The assignment shall effectually vest the benefit of the invention and patent in the secretary of state or the Admiralty on behalf of His Majesty, and all covenants and agreements therein contained for keeping the invention secret and otherwise shall be valid and effectual (notwithstanding any want of valuable consideration), and may be enforced accordingly by the secretary of state or the Admiralty.

(3) Where any such assignment has been made, the secretary of state or the Admiralty may at any time before the publication of the complete specification certify to the comptroller that, in the interest of the public service, the particulars of the invention and of the manner in which it is to be performed should be kept secret.

(4) If the secretary of state or the Admiralty so certify the application and specifications, with the drawings (if any), and any amendment of the complete specification, and any copies of such documents and drawings shall, instead of being left in the ordinary manner at the patent office, be delivered to the comptroller in a packet sealed by authority of the secretary of state or the Admiralty.

(5) The packet shall, until the expiration of the term during which a patent for the invention may be in force, be kept sealed by the comptroller, and shall not be opened save under the authority of an order of the secretary of state or the Admiralty or of the law officer.

(6) The sealed packet shall be delivered at any time during the continuance of the patent to any person authorized by the secretary of state or the Admiralty to receive it, and shall if returned to the comptroller be again kept sealed by him.

(7) On the expiration of the term of the patent, the sealed packet shall be delivered to the secretary of state or the Admiralty.

(8) Where the secretary of state or the Admiralty certify as aforesaid, after an application for a patent has been left at the patent office, but before the publication of the complete specification, the application and specifications, with the drawings (if any), shall be forthwith placed in a packet sealed by authority of the comptroller, and the packet shall be subject to the foregoing provisions respecting a packet sealed by authority of the secretary of state or the Admiralty.

(9) No proceeding by petition or otherwise shall lie for revocation of a patent granted for an invention in relation to which a certificate has been given by the secretary of state or the Admiralty as aforesaid.

(10) No copy of any specification or other document or drawing, by this section required to be placed in a sealed packet, shall in any manner whatever be published or open to the inspection of the public, but, save as in this section otherwise directed, the provisions of this act shall apply in respect of any such invention and patent as aforesaid.

(11) The secretary of state or the Admiralty may at any time waive the benefit of this section with respect to any particular invention, and the specifications, documents, and drawings shall be thenceforth kept and dealt with in the ordinary way.

(12) The communication of any invention for any improvement in instruments or munitions of war to the secretary of state or the Admiralty, or to any person or persons authorized by the secretary of state or the Admiralty to investigate the same or the merits thereof, shall not, nor shall anything done for the purposes of the investigation, be deemed use or publication of such invention so as to prejudice the grant or validity of any patent for the same.

(13) Rules may be made under this act, after consultation with the secretary of state and the Admiralty, for the purpose of insuring secrecy with respect to patents to which this section applies, and those rules may modify any of the provisions of this act in their application to such patents as aforesaid so far as may appear necessary for the purpose aforesaid.

LEGAL PROCEEDINGS.

31. (1) In an action or proceeding for infringement or revocation of a patent, the court may, if it think fit, and shall on the request of either of the parties to the proceeding, call in the aid of an assessor specially qualified, and try the case wholly or partially with his assistance; the action shall be tried without a jury unless the court otherwise directs.

(2) The court of appeal may, if they think fit, in any proceeding before them call in the aid of an assessor as aforesaid.

(3) The remuneration, if any, to be paid to an assessor under this section shall be determined by the court or the court of appeal, as the case may be, and be paid as part of the expenses of the execution of this act.

32. A defendant in an action for infringement of a patent, if entitled to present a petition to the court for the revocation of the patent, may, without presenting such a petition, apply in accordance with the rules of the supreme court by way of counterclaim in the action for the revocation of the patent.

33. A patentee shall not be entitled to recover any damages in respect of any infringement of a patent granted after the commencement of this act from any defendant who proves that at the date of the infringement he was not aware, nor had reasonable means of making himself aware, of the existence of the patent, and the marking of an article with the word "patent," "patented," or any word or words expressing or implying that a patent has been obtained for the article, stamped, engraved, impressed on, or otherwise applied to the article, shall not be deemed to constitute notice of the existence of the patent unless the word or words are accompanied by the year and number of the patent: *Provided*, That nothing in this section shall affect any proceedings for an injunction.

34. In an action for infringement of a patent, the court may on the application of either party make such order for an injunction inspection or account, and impose such terms and give such directions respecting the same and the proceedings thereon as the court may see fit.

35. In an action for infringement of a patent, the court may certify that the validity of the patent came in question; and, if the court so certifies, then in any subsequent action for infringement the plaintiff in that action on obtaining a final order or judgment in his favour shall, unless the court trying the action otherwise directs, have his full costs, charges, and expenses as between solicitor and client.

36. Where any person claiming to be the patentee of an invention, by circulars, advertisements, or otherwise, threatens any other person with any legal proceedings or liability in respect of any alleged infringement of the patent, any person aggrieved thereby may bring an action against him, and may obtain an injunction against the continuance of such threats, and may recover such damage (if any) as he has sustained thereby, if the alleged infringement to which the threats related was not in fact an infringement of any legal rights of the person making such threats: *Provided*, That this section shall not apply if the person making such threats with due diligence commences and prosecutes an action for infringement of his patent.

MISCELLANEOUS.

37. Where, after the commencement of this act, a patent is granted to two or more persons jointly, they shall, unless otherwise specified in the patent, be treated for the purpose of the devolution of the legal interests therein as joint tenants, but, subject to any contract to the contrary, each of such persons shall be entitled to use the invention for his own profit without accounting to the others, but shall not be entitled to grant a license without their consent, and, if any such person dies, his beneficial interest in the patent shall devolve on his personal representatives as part of his personal estate.

38. (1) It shall not be lawful in any contract made after the passing of this act in relation to the sale or lease of, or license to use or work, any article or process protected by a patent to insert a condition the effect of which will be—

(*a*) to prohibit or restrict the purchaser, lessee, or licensee from using any article or class of articles, whether patented or not, or any patented process, supplied or owned by any person other than the seller, lessor, or licensor or his nominees; or

(*b*) to require the purchaser, lessee, or licensee to acquire from the seller, lessor, or licensor, or his nominees, any article or class of articles not protected by the patent; and any such condition shall be null and void, as being in restraint of trade and contrary to public policy:

Provided, That this subsection shall not apply if—(i) the seller, lessor, or licensor proves that at the time the contract was entered into the purchaser, lessee, or licensee had the option of purchasing the article or obtaining a lease or license on reasonable terms, without such conditions as aforesaid; and (ii) the contract entitles the purchaser, lessee, or licensee to relieve himself of his liability to observe any such condition on giving the other party three months' notice in writing and on payment in compensation for such relief in the case of a purchase of such sum, or in the case of a lease or license of such rent or royalty for the residue of the term of the contract, as may be fixed by an arbitrator appointed by the board of trade.

(2) Any contract relating to the lease of or license to use or work any patented article or patented process, whether made before or after the passing of this act, may at any time after the patent or all the patents by which the article or process was protected at the time of the making of the contract has or have ceased to be in force, and notwithstanding anything in the same or in any other contract to the contrary, be determined by either party on giving three months' notice in writing to the other party; but where any such notice is given determining any contract made before the passing of this act, the party giving the notice shall be liable to pay such compensation as, failing agreement, may be awarded by an arbitrator appointed by the board of trade.

(3) Any contract made before the passing of this act relating to the lease of or license to use or work any patented article or process and containing any condition which, had the contract been made after the passing of this act, would by virtue of this section have been null and void may, at any time before the contract is determinable under the last preceding subsection, and notwithstanding anything in the same or any other contract to the contrary, be determined by either party on giving three months' notice in writing to the other party, but where any such notice is given the party giving the notice shall be liable to pay such compensation as, failing agreement, may be awarded by an arbitrator appointed by the board of trade.

(4) The insertion by the patentee in a contract made after the passing of this act of any condition which by virtue of this section is null and void shall be available as a defense to an action for infringement of the patent to which the contract relates brought while that contract is in force.

(5) Nothing in this section shall—

(*a*) affect any condition in a contract whereby a person is prohibited from selling any goods other than those of a particular person; or

(*b*) be construed as validating any contract which would, apart from this section, be invalid; or

(*c*) affect any right of determining a contract or condition in a contract exercisable independently of this section; or

(*d*) affect any condition in a contract for the lease of or license to use a patented article, whereby the lessor or licensor reserves to himself or his nominees the right to supply such new parts of the patented article as may be required to put or keep it in repair.

39. (1) The comptroller shall, in proceedings relating to an opposition to the grant of a patent or to an application for the amendment of a specification or the revocation of a patent, have power by order to award to any party such costs as he may consider reasonable, and to direct how and by what parties they are to be paid, and any such order may be made a rule of the court.

(2) If a party giving notice of opposition to the grant of a patent or to the amendment of a specification, or applying to the comptroller for the revocation of a patent, or

giving notice of appeal from any decision of the comptroller, neither resides nor carries on business in the United Kingdom or the Isle of Man, the comptroller, or, in case of appeal to the law officer, the law officer, may require such party to give security for costs of the proceedings or appeal, and in default of such security being given may treat the proceedings or appeal as abandoned.

40. The law officer may examine witnesses on oath and administer oaths for that purpose, and may make rules regulating references and appeals to the law officer and the practice and procedure before him under this part of this act; and in any proceeding before the law officer under this part of this act, the law officer may order costs to be paid by either party, and any such order may be made a rule of the court.

41. (1) An invention covered by any patent applied for on or after the first day of January, one thousand nine hundred and five, shall not be deemed to have been anticipated by reason only of its publication in a specification left pursuant to an application made in the United Kingdom not less than fifty years before the date of the application for the patent, or of its publication in a provisional specification of any date not followed by a complete specification.

(2) A patent shall not be held to be invalid by reason only of the invention in respect of which the patent was granted, or any part thereof, having been published prior to the date of the patent, if the patentee proves to the satisfaction of the court that the publication was made without his knowledge and consent, and that the matter published was derived or obtained from him, and, if he learned of the publication before the date of his application for the patent, that he applied for and obained protection for his invention with all reasonable diligence after learning of the publication.

42. A patent shall not be held to be invalid on the ground that the complete specification claims a further or different invention to that contained in the provisional, if the invention therein claimed, so far as it is not contained in the provisional, was novel at the date when the complete specification was put in, and the applicant was the first and true inventor thereof.

43. (1) If the person claiming to be inventor of an invention dies without making an application for a patent for the invention, application may be made by, and a patent for the invention granted to, his legal representative.

(2) Every such application must contain a declaration by the legal representative that he believes him to be the true and first inventor of the invention.

44. If a patent is lost or destroyed, or its nonproduction is accounted for to the satisfaction of the comptroller, the comptroller may at any time seal a duplicate thereof.

45. (1) The exhibition of an invention at an industrial or international exhibition, certified as such by the board of trade, or the publication of any description of the invention during the period of the holding of the exhibition, or the use of the invention for the purpose of the exhibition in the place where the exhibition is held, or the use of the invention during the period of the holding of the exhibition by any person elsewhere, without the privity or consent of the inventor, shall not prejudice the right of the inventor to apply for and obtain a patent in respect of the invention or the validity of any patent granted on the application, provided that—

(*a*) the exhibitor, before exhibiting the invention, gives the comptroller the prescribed notice of his intention to do so; and

(*b*) the application for a patent is made before or within six months from the date of the opening of the exhibition.

(2) His Majesty may by order in council apply this section to any exhibition mentioned in the order in like manner as if it were an industrial or international exhibition certified as such by the board of trade, and any such order may provide that the exhibitor shall be relieved from the condition of giving notice to the comptroller of his intention to exhibit, and shall be so relieved either absolutely or upon such terms and conditions as may be stated in the order.

46. (1) The comptroller shall issue periodically an illustrated journal of patented inventions, as well as reports of patent cases decided by courts of law, and any other information that he may deem generally useful or important.

(2) Provision shall be made by the comptroller for keeping on sale copies of such journal, and also of all complete specifications of patents in force, with any accompanying drawings.

(3) The comptroller shall continue, in such form as he deems expedient, the indexes and abridgments of specifications hitherto published, and shall prepare and publish such other indexes, abridgments of specifications, catalogues, and other works relating to inventions as he thinks fit.

47. (1) The control and management of the patent museum and its contents shall remain vested in the board of education, subject to such directions as His Majesty in council may think fit to give.

(2) The board of education may at any time require a patentee to furnish them with a model of his invention on payment to the patentee of the cost of the manufacture of the model, the amount to be settled, in case of dispute, by the board of trade.

48. (1) A patent shall not prevent the use of an invention for the purposes of the navigation of a foreign vessel within the jurisdiction of any of His Majesty's courts in the United Kingdom or Isle of Man, or the use of an invention in a foreign vessel within that jurisdiction, provided it is not used therein for or in connection with the manufacture or preparation of anything intended to be sold in or exported from the United Kingdom or Isle of Man.

(2) This section shall not extend to vessels of any foreign state of which the laws do not confer corresponding rights with respect to the use of inventions in British vessels while in the ports of that state, or in the waters within the jurisdiction of its courts.

PART II.—*Designs.*

REGISTRATION OF DESIGNS.

49. (1) The comptroller may, on the application made in the prescribed form and manner of any person claiming to be the proprietor of any new or original design not previously published in the United Kingdom, register the design under this part of this act.

(2) The same design may be registered in more than one class and, in case of doubt as to the class in which a design ought to be registered, the comptroller may decide the question.

(3) The comptroller may, if he thinks fit, refuse to register any design presented to him for registration, but any person aggrieved by any such refusal may appeal to the board of trade, and the board shall, after hearing the applicant and the comptroller, if so required, make an order determining whether, and subject to what conditions, if any, registration is to be permitted.

(4) An application which, owing to any default or neglect on the part of the applicant, has not been completed so as to enable registration to be effected within the prescribed time shall be deemed to be abandoned.

(5) A design when registered shall be registered as of the date of the application for registration.

50. Where a design has been registered in one or more classes of goods the application of the proprietor of the design to register it in some one or more other classes shall not be refused, nor shall the registration thereof be invalidated—

(*a*) On the ground of the design not being a new and original design, by reason only that is was so previously registered; or

(*b*) On the ground of the design having been previously published in the United Kingdom, by reason only that it has been applied to goods of any class in which it was so previously registered.

51. (1) The comptroller shall grant a certificate of registration to the proprietor of the design when registered.

(2) The comptroller may, in case of loss of the original certificate, or in any other case in which he deems it expedient, furnish one or more copies of the certificate.

52. (1) There shall be kept at the patent office a book called the register of designs wherein shall be entered the names and addresses of proprietors of registered designs, notifications of assignments and of transmissions of registered designs, and such other matters as may be prescribed.

(2) The register of designs existing at the commencement of this act shall be incorporated with and form part of the register of designs under this act.

(3) The register of designs shall be prima facie evidence of any matters by this act directed or authorized to be entered therein.

COPYRIGHT IN REGISTERED DESIGNS.

53. (1) When a design is registered the registered proprietor of the design shall, subject to the provisions of this act, have copyright in the design during five years from the date of registration.

(2) If within the prescribed time before the expiration of the said five years application for the extension of the period of copyright is made to the comptroller in the prescribed manner, the comptroller shall on payment of the prescribed fee extend the period of copyright for a second period of five years from the expiration of the original period of five years.

(3) If within the prescribed time before the expiration of such second period of five years application for the extension of the period of copyright is made to the comptroller in the prescribed manner, the comptroller may, subject to any rules under this act, on payment of the prescribed fee, extend the period of copyright for a third period of five years from the expiration of the second period of five years.

54. (1) Before delivery on sale of any articles to which a registered design has been applied, the proprietor shall—

(*a*) (If exact representations or specimens were not furnished on the application for registration), furnish to the comptroller the prescribed number of exact representations or specimens of the design; and if he fails to do so the comptroller may erase his name from the register, and thereupon the copyright in the design shall cease; and

(*b*) Cause each such articles to be marked with the prescribed mark, or with the prescribed words or figures denoting that the design is registered; and if he fails to do so the proprietor shall not be entitled to recover any penalty or damages in respect of any infringement of his copyright in the design unless he shows that he took all proper steps to insure the marking of the article, or unless he shows that the infringement took place after the person guilty thereof knew or had received notice of the existence of the copyright in the design.

(2) Where a representation is made to the board of trade by or on behalf of any trade or industry that in the interests of the trade or industry it is expedient to dispense with or modify as regards any class or description of articles any of the requirements of this section as to marking, the board may, if they think fit, by rule under this act dispense with or modify such requirements as regards any such class or description of articles to such extent and subject to such conditions as they think fit.

55. The disclosure of a design by the proprietor to any other person, in such circumstancess as would make it contrary to good faith for that other person to use or publish the design, and the disclosure of a design in breach of good faith by any person other than the proprietor of the design, and the acceptance of a first and confidential order for goods bearing a new or original textile design intended for registration, shall not be deemed to be a publication of the design sufficient to invalidate the copyright thereof if registration thereof is obtained subsequently to the disclosure or acceptance.

56. (1) During the existence of copyright in a design, or such shorter period not being less than two years from the registration of the design as may be prescribed, the design shall not be open to inspection except by the proprietor or a person authorized in writing by him, or a person authorized by the comptroller or by the court, and furnishing such information as may enable the comptroller to identify the design, and shall not be open to the inspection of any person except in the presence of the comptroller, or of an officer acting under him, and on payment of the prescribed fee; and the person making the inspection shall not be entitled to take any copy of the design, or of any part thereof: *Provided*, That where registration of a design is refused on the ground of identity with a design already registered, the applicant for registration shall be entitled to inspect the design so registered.

(2) After the expiration of the copyright in a design, or such shorter period as aforesaid, the design shall be open to inspection, and copies thereof may be taken by any person on payment of the prescribed fee.

(3) Different periods may be prescribed under this section for different classes of goods.

57. On the request of any person furnishing such information as may enable the comptroller to identify the design, and on payment of the prescribed fee, the comptroller shall inform such person whether the registration still exists in respect of the design, and if so, in respect of what classes of goods, and shall state the date of registration and the name and address of the registered proprietor.

58. (1) At any time after the registration of a design any person may apply to the comptroller for the cancellation of the registration on the ground that the design is used for manufacture exclusively or mainly outside the United Kingdom, and where such an application is made the provisions of this act with respect to the revocation of patents worked outside the United Kingdom (including those relating to costs) shall apply with the necessary modifications, except that there shall be no appeal from the decision of the comptroller.

(2) Such ground as aforesaid shall be available by way of a defense to an action for infringement of the copyright in the design.

INDUSTRIAL AND INTERNATIONAL EXHIBITIONS.

59. (1) The exhibition at an industrial or international exhibition certified as such by the board of trade, or the exhibition elsewhere during the period of the holding of the exhibition, without the privity or consent of the proprietor, of a design, or of any article to which a design is applied, or the publication, during the holding of any such exhibition, of a description of a design, shall not prevent the design from being registered, or invalidate the registration thereof: *Provided*, That—

(*a*) The exhibitor, before exhibiting the design or article, or publishing a description of the design, gives the comptroller the prescribed notice of his intention to do so; and

(*b*) The application for registration is made before or within six months from the date of the opening of the exhibition.

(2) His Majesty may, by order in council, apply this section to any exhibition mentioned in the order in like manner as if it were an industrial or international exhibition certified as such by the board of trade, and any such order may provide that the exhibitor shall be relieved from the condition of giving notice to the comptroller of his intention to exhibit, and shall be so relieved either absolutely or upon such terms and conditions as may be stated in the order.

LEGAL PROCEEDINGS.

60. (1) During the existence of copyright in any design it shall not be lawful for any person—

(*a*) For the purposes of sale to apply or cause to be applied to any article in any class of goods in which the design is registered the design or any fraudulent or obvious

imitation thereof, except with the license or written consent of the registered proprietor, or to do anything with a view to enable the design to be so applied; or

(*b*) Knowing that the design or any fraudulent or obvious imitation thereof has been applied to any article without the consent of the registered proprietor to publish or expose or cause to be published or exposed for sale that article.

(2) If any person acts in contravention of this section he shall be liable for every contravention to pay to the registered proprietor of the design a sum not exceeding fifty pounds, recoverable as a simple contract debt, or if the proprietor elects to bring an action for the recovery of damages for such contravention, and for an injunction against the repetition thereof, he shall be liable to pay such damages as may be awarded and to be restrained by injunction accordingly: *Provided*, That the total sum recoverable as a simple contract debt in respect of any one design shall not exceed one hundred pounds.

61. The provisions of this act with regard to certificates of the validity of a patent, and to the remedy in case of groundless threats of legal proceedings by a patentee shall apply in the case of registered designs in like manner as they apply in the case of patents, with the substitution of references to the copyright in a design for references to a patent, and of references to the proprietor of a design for references to the patentee, and of references to the design for references to the invention.

PART III.—*General.*

PATENT OFFICE AND PROCEEDINGS THEREAT.

62. (1) The treasury may continue to provide for the purposes of this act and the trade-marks act, 1905, an office with all requisite buildings and conveniences, which shall be called, and is in this act referred to as, the patent office.

(2) The patent office shall be under the immediate control of the comptroller, who shall act under the superintendence and direction of the board of trade.

(3) Any act or thing directed to be done by or to the comptroller may be done by or to any officer authorised by the board of trade.

(4) Rules under this act may provide for the establishment of branch offices for designs at Manchester or elsewhere, and for any document or thing required by this act to be sent to or done at the patent office being sent to or done at any branch office which may be established.

63. (1) There shall continue to be a comptroller general of patents, designs, and trade-marks, and the board of trade may, subject to the approval of the treasury, appoint the comptroller, and so many examiners and other officers and clerks, with such designations and duties as the board of trade think fit, and may remove any of those officers and clerks.

(2) The salaries of those officers and clerks shall be appointed by the board of trade, with the concurrence of the treasury, and those salaries and the other expenses of the execution of this act and the trade-marks act, 1905, shall continue to be paid out of money provided by Parliament.

64. Impressions of the seal of the patent office shall be judicially noticed and admitted in evidence.

FEES.

65. There shall be paid in respect of the grant of patents and the registration of designs, and applications therefor, and in respect of other matters with relation to patents and designs under this act, such fees as may be, with the sanction of the treasury, prescribed by the board of trade, so however that the fees prescribed in respect of the instruments and matters mentioned in the first schedule to this act shall not exceed those specified in that schedule.

PROVISIONS AS TO REGISTERS AND OTHER DOCUMENTS IN PATENT OFFICE.

66. There shall not be entered in any register kept under this act, or be receivable by the conptroller, any notice of any trust, expressed, implied, or constructive.

67. Every register kept under this act shall at all convenient times be open to the inspection of the public, subject to the provisions of this act and to such regulations as may be prescribed; and certified copies, sealed with the seal of the patent office, of any entry in any such register shall be given to any person requiring the same on payment of the prescribed fee.

68. Reports of examiners made under this act shall not in any case be published or be open to public inspection, and shall not be liable to production or inspection in any legal proceeding, unless the court or officer having power to order discovery in such legal proceeding certifies that such production or inspection is desirable in the interests of justice, and ought to be allowed.

69. (1) Where an application for a patent has been abandoned, or become void, the specifications and drawings (if any) accompanying or left in connection with such application, shall not, save as otherwise expressly provided by this act, at any time be open to public inspection or be published by the comptroller.

(2) Where an application for a design has been abandoned or refused the application and any drawings, photographs, tracings, representations, or specimens left in connection with the application shall not at any time be open to public inspection or be published by the comptroller.

70. The comptroller may, on request in writing accompanied by the prescribed fee—

(*a*) correct any clerical error in or in connection with an application for a patent or in any patent or any specification;

(*b*) cancel the registration of a design either wholly or in respect of any particular goods in connection with which the design is registered;

(*c*) correct any clerical error in the representation of a design or in the name or address of the proprietor of any patent or design, or in any other matter which is entered upon the register of patents or the register of designs.

71. (1) Where a person becomes entitled by assignment, transmission, or other operation of law to a patent, or to the copyright in a registered design, the comptroller shall, on request and on proof of title to his satisfaction, register him as the proprietor of a patent or design.

(2) Where any person becomes entitled as mortgagee, licensee, or otherwise to any interest in a patent or design, the comptroller shall, on request and on proof of title to his satisfaction, cause notice of the interest to be entered in the prescribed manner in the register of patents or designs, as the case may be.

(3) The person registered as the proprietor of a patent or design shall, subject to the provisions of this act and to any rights appearing from the register to be vested in any other person, have power absolutely to assign, grant licenses as to, or otherwise deal with, the patent or design and to give effectual receipts for any consideration for any such assignment, license, or dealing: *Provided*, That any equities in respect of the patent or design may be enforced in like manner as in respect of any other personal property.

72. (1) The court may, on the application in the prescribed manner of any person aggrieved by the noninsertion in or omission from the register of patents or designs of any entry, or by any entry made in either such register without sufficient cause, or by any entry wrongly remaining on either such register, or by an error or defect in any entry in either such register, make such order for making, expunging, or varying such entry as it may think fit.

(2) The court may in any proceeding under this section decide any question that it may be necessary or expedient to decide in connection with the rectification of a register.

(3) The prescribed notice of any application under this section shall be given to the comptroller, who shall have the right to appear and be heard thereon, and shall appear if so directed by the court.

(4) Any order of the court rectifying a register shall direct that notice of the rectification be served on the comptroller in the prescribed manner, who shall upon the receipt of such notice rectify the register accordingly.

POWERS AND DUTIES OF COMPTROLLER.

73. Where any discretionary power is by or under this act given to the comptroller, he shall not exercise that power adversely to the applicant for a patent, or for amendment of a specification, or for registration of a design, without (if so required within the prescribed time by the applicant) giving the applicant an opportunity of being heard.

74. The comptroller may, in any case of doubt or difficulty arising in the administration of any of the provisions of this act, apply to a law officer for directions in the matter.

75. The comptroller may refuse to grant a patent for an invention, or to register a design, of which the use would, in his opinion, be contrary to law or morality.

76. The comptroller shall, before the first day of June in every year, cause a report respecting the execution by or under him of this act to be laid before both Houses of Parliament, and therein shall include for the year to which the report relates all general rules made in that year under or for the purposes of this act, and an account of all fees, salaries, and allowances, and other money received and paid under this act.

EVIDENCE, ETC.

77. (1) Subject to rules under this act in any proceeding under this act before the comptroller the evidence shall be given by statutory declaration in the absence of directions to the contrary; but in any case in which the comptroller thinks it right so to do, he may take evidence viva voce in lieu of or in addition to evidence by declaration or allow any declarant to be cross-examined on his declaration. Any such statutory declaration may in the case of appeal be used before the court in lieu of evidence by affidavit, but if so used shall have all the incidents and consequences of evidence by affidavit.

(2) In case any part of the evidence is taken viva voce, the comptroller shall, in respect of requiring the attendance of witnesses and taking evidence on oath, be in the same position in all respects as an official referee of the supreme court.

78. A certificate purporting to be under the hand of the comptroller as to any entry, matter, or thing which he is authorized by this act, ar any general rules made thereunder, to make or do, shall be prima facie evidence of the entry having been made, and of the contents thereof, and of the matter or thing having been done or left undone.

79. Printed or written copies or extracts, purporting to be certified by the comptroller and sealed with the seal of the patent office, of or from patents, specifications, and other documents in the patent office, and of or from registers and other books kept there, shall be admitted in evidence in all courts in His Majesty's dominions, and in all proceedings, without further proof or production of the originals.

80. (1) Copies of all specifications, drawings, and amendments left at the patent office after the commencement of this act, printed for and sealed with the seal of the patent office, shall be transmitted to the Edinburgh Museum of Science and Art, and to the enrollments office of the chancery division in Ireland, and to the rolls office in the Isle of Man, within twenty-one days after they have been accepted or allowed at the patent office.

(2) Certified copies of or extracts from any such documents and of any documents so transmitted in pursuance of any enactment repealed by this act shall be given to any person on payment of the prescribed fee; and any such copy or extract shall be ad-

mitted in evidence in all courts in Scotland and Ireland and in the Isle of Man without further proof or production of the originals.

81. Any application, notice, or other document authorized or required to be left, made, or given at the patent office or to the comptroller, or to any other person under this act, may be sent by post.

82. Where the last day fixed by this act for doing anything under this act falls on any day specified in rules under this act as an excluded day, the rules may provide for the thing being done on the next following day not being an excluded day.

83. (1) If any person is, by reason of infancy, lunacy, or other disability, incapable of making any declaration or doing anything required or permitted by or under this act, the guardian or committee (if any) of the person subject to the disability, or, if there be none, any person appointed by any court possessing jurisdiction in respect of his property, may make such declaration or a declaration as nearly corresponding thereto as circumstances permit, and do such thing in the name and on behalf of the person subject to the disability.

(2) An appointment may be made by the court for the purposes of this section upon the petition of any person acting on behalf of the person subject to the disability or of any other person interested in the making of the declaration or the doing of the thing.

REGISTER OF PATENT AGENTS.

84. (1) A person shall not be entitled to describe himself as a patent agent, whether by advertisement, by description on his place of business, by any document issued by him, or otherwise, unless he is registered as a patent agent in pursuance of this act or an act repealed by this act.

(2) Every person who proves to the satisfaction of the board of trade that prior to the twenty-fourth day of December, one thousand eight hundred and eighty-eight, he had been bona fide practising as a patent agent shall be entitled to be registered as a patent agent in pursuance of this act.

(3) If any person knowingly describes himself as a patent agent in contravention of this section he shall be liable on conviction under the summary jurisdiction acts to a fine not exceeding twenty pounds.

(4) In this section "patent agent" means exclusively an agent for obtaining patents in the United Kingdom.

85. (1) Rules under this act may authorize the comptroller to refuse to recognize as agent in respect of any business under this act any person whose name has been erased from the register of patent agents, or who is proved to the satisfaction of the board of trade, after being given an opportunity of being heard, to have been convicted of such an offense or to have been guilty of such misconduct as would have rendered him liable, if his name had been on the register of patent agents, to have his name erased therefrom, and may authorize the comptroller to refuse to recognize as agent in respect of any business under this act any company which, if it had been an individual, the comptroller could refuse to recognize as such agent.

(2) Where a company or firm acts as agents, such rules as aforesaid may authorize the comptroller to refuse to recognize the company or firm as agent if any person whom the comptroller could refuse to recognize as an agent acts as director or manager of the company or is a partner in the firm.

(3) The comptroller shall refuse to recognize as agent in respect of any business under this act any person who neither resides nor has a place of business in the United Kingdom or the Isle of Man.

POWERS, ETC., OF BOARD OF TRADE.

86. (1) The board of trade may make such general rules and do such things as they think expedient, subject to the provisions of this act—

(*a*) For regulating the practice of registration under this act.

(*b*) For classifying goods for the purposes of designs.

(*c*) For making or requiring duplicates of specifications, drawings, and other documents.

(*d*) For securing and regulating the publishing and selling of copies, at such prices and in such manner as the board of trade think fit, of specifications, drawings, and other documents.

(*e*) For securing and regulating the making, printing, publishing, and selling of indexes to, and abridgments of, specifications and other documents in the patent office; and providing for the inspection of indexes and abridgments and other documents.

(*f*) For regulating (with the approval of the treasury) the presentation of copies of patent office publications to patentees and to public authorities, bodies, and institutions at home and abroad.

(*g*) For regulating the keeping of the register of patent agents under this act.

(*h*) Generally for regulating the business of the patent office, and all things by this act placed under the direction or control of the comptroller, or of the board of trade.

(2) General rules shall whilst in force be of the same effect as if they were contained in this act.

(3) Any rules made in pursuance of this section shall be advertised twice in the official journal to be issued by the comptroller, and shall be laid before both Houses of Parliament as soon as practicable after they are made, and if either House of Parliament, within the next forty days after any rules have been so laid before that house, resolves that the rules or any of them ought to be annulled, the rules or those to which the resolution applies shall after the date of such resolution be of no effect, without prejudice to the validity of anything done in the meantime under the rules or to the making of any new rules.

87. (1) All things required or authorized under this act to be done by, to, or before the board of trade, may be done by, to, or before the president or a secretary or an assistant secretary of the board.

(2) All documents purporting to be orders made by the board of trade and to be sealed with the seal of the board, or to be signed by a secretary or assistant secretary of the board, or by any person authorized in that behalf by the president of the board, shall be received in evidence, and shall be deemed to be such orders without further proof, unless the contrary is shown.

(3) A certificate, signed by the president of the board of trade, that any order made or act done is the order or act of the board, shall be conclusive evidence of the fact so certified.

88. An order in council under this act shall, from a date to be mentioned for the purpose in the order, take effect as if it had been contained in this act, but may be revoked or varied by a subsequent order.

OFFENSES.

89. (1) If any person makes or causes to be made a false entry in any register kept under this act, or a writing falsely purporting to be a copy of an entry in any such register, or produces or tenders or causes to be produced or tendered in evidence any such writing, knowing the entry or writing to be false, he shall be guilty of a misdemeanor.

(2) If any person falsely represents that any article sold by him is a patented article, or falsely describes any design applied to any article sold by him as registered, he shall be liable for every offense, on conviction under the summary jurisdiction acts, to a fine not exceeding five pounds.

(3) If any person sells an article having stamped, engraved, or impressed thereon or otherwise applied thereto the word "patent," "patented," "registered," or any other word expressing or implying that the article is patented or that the design applied

thereto is registered, he shall be deemed for the purposes of this section to represent that the article is a patented article or that the design applied thereto is a registered design.

(4) Any person who, after the copyright in a design has expired, puts or causes to be put on any article to which the design has been applied the word "registered," or any word or words implying that there is a subsisting copyright in the design, shall be liable on conviction under the summary jurisdiction acts to a fine not exceeding five pounds.

(5) If any person uses on his place of business, or on any document issued by him, or otherwise, the words "patent office," or any other words suggesting that his place of business is officially connected with, or is, the patent office, he shall be liable on conviction under the summary jurisdiction acts to a fine not exceeding twenty pounds.

90. (1) The grant of a patent under this act shall not be deemed to authorize the patentee to use the royal arms or to place the royal arms on any patented article.

(2) If any person, without the authority of His Majesty, uses in connection with any business, trade, calling, or profession the royal arms (or arms so nearly resembling them as to be calculated to deceive) in such manner as to be calculated to lead to the belief that he is duly authorized to use the royal arms, he shall be liable on conviction under the summary jurisdiction acts to a fine nor exceeding twenty pounds: *Provided*, That nothing in this section shall be construed as affecting the right, if any, of the proprietor of a trade-mark containing such arms to continue to use such trade-mark.

INTERNATIONAL AND COLONIAL ARRANGEMENTS.

91. (1) If His Majesty is pleased to make any arrangement with the Government of any foreign state for mutual protection of inventions, or designs, or trade-marks, then any person who has applied for protection for any invention, design, or trade-mark in that state shall be entitled to a patent for his invention or to registration of his design or trade-mark under this act or the trade-marks act, 1905, in priority to other applicants; and the patent or registration shall have the same date as the date of the application in the foreign State.

Provided, That—

(*a*) The application is made, in the case of a patent within twelve months, and in the case of a design or trade-mark within four months, from the application for protection in the foreign state; and

(*b*) Nothing in this section shall entitle the patentee or proprietor of the design or trade-mark to recover damages for infringements happening prior to the actual date on which his complete specification is accepted, or his design or trade-mark is registered in this country.

(2) The patent granted for the invention or the registration of a design or trade-mark shall not be invalidated—

(*a*) In the case of a patent, by reason only of the publication of a description of, or use of, the invention; or

(*b*) In the case of a design, by reason only of the exhibition or use of, or the publication of a description or representation of, the design; or

(*c*) In the case of a trade-mark, by reason only of the use of the trade-mark, in the United Kingdom or the Isle of Man during the period specified in this section as that within which the application may be made.

(3) The application for the grant of a patent, or the registration of a design, or the registration of a trade-mark under this section, must be made in the same manner as an ordinary application under this act or the trade-marks act, 1905: *Provided*, That—

(*a*) In the case of patents the application shall be accompanied by a complete specification, which, if it is not accepted within the twelve months from the application for protection in the foreign state, shall with the drawings (if any) be open to inspection at the expiration of that period; and

(*b*) In the case of trade-marks, any trade-mark the registration of which has been duly applied for in the country of origin may be registered under the trade-mark act, 1905.

(4) The provisions of this section shall apply only in the case of those foreign states with respect to which His Majesty by order in council declares them to be applicable, and so long only in the case of each state as the order in council continues in force with respect to that state.

(5) Where it is made to appear to His Majesty that the legislature of any British possession has made satisfactory provision for the protection of inventions, designs, and trade-marks, patented or registered in this country, it shall be lawful for His Majesty, by order in council, to apply the provisions of this section to that possession, with such variations or additions, if any, as may be stated in the order.

DEFINITIONS.

92. (1) In this act, unless the context otherwise requires, "the court" means, subject to the provisions as to Scotland, Ireland, and the Isle of Man, the high court in England.

(2) Where by virtue of this act a decision of the comptroller is subject to an appeal to the court, or a petition may be referred or presented to the court, the appeal shall, subject to and in accordance with rules of the supreme court, be made and the petition referred or presented to such judge of the high court as the lord chancellor may select for the purpose, and the decision of that judge shall be final, except in the case of an appeal from a decision of the comptroller revoking a patent on any ground on which the grant of such patent might have been opposed.

93. In this act, unless the context otherwise requires—

"Law officer" means the attorney general or solicitor general for England.

"Prescribed" means prescribed by general rules under this act.

"British possession" does not include the Isle of Man or the Channel Islands.

"Patent" means letters patent for an invention.

"Patentee" means the person for the time being entitled to the benefit of a patent.

"Invention" means any manner of new manufacture the subject of letters patent and grant of privilege within section six of the statute of monopolies (that is, the act of the twenty-first year of the reign of King James the First, chapter three, intituled "An act concerning monopolies and dispensations with penal laws and the forfeiture thereof"), and includes an alleged invention.

"Inventor" and " applicant" shall, subject to the provisions of this act, include the legal representative of a deceased inventor or applicant.

"Design" means any design (not being a design for a sculpture or other thing within the protection of the sculpture copyright act, 1814) applicable to any article, whether the design is applicable for the pattern, or for the shape or configuration, or for .the ornament thereof, or for any two or more of such purposes, and by whatever means it is applicable, whether by printing, painting, embroidering, weaving, sewing, modeling, casting, embossing, engraving, staining, or any other means whatever, manual, mechanical, or chemical, separate or combined.

"Article" means (as respects designs) any article of manufacture and any substance artificial or natural, or partly artificial and partly natural.

"Copyright" means the exclusive right to apply a design to any article in any class in which the design is registered.

"Proprietor of a new and original design"—

(*a*) Where the author of the design, for good consideration, executes the work for some other person, means the person for whom the design is so executed; and

(*b*) Where any person acquires the design or the right to apply the design to any article, either exclusively of any other person or otherwise, means, in the respect and

to the extent in and to which the design or right has been so acquired, the person by whom the design or right is so acquired; and

(c) In any other case, means the author of the design; and where the property in, or the right to apply, the design has devolved from the original proprietor upon any other person, includes that other person.

APPLICATION TO SCOTLAND, IRELAND, AND THE ISLE OF MAN.

94. In the application of this act to Scotland—

(1) In any action for infringement of a patent in Scotland the provisions of this act with respect to calling in the aid of an assessor shall apply, and the action shall be tried without a jury, unless the court otherwise direct, but otherwise nothing shall affect the jurisdiction and forms of process of the courts in Scotland in such an action or in any action or proceeding respecting a patent hitherto competent to those courts; and for the purposes of the provisions so applied "court of appeal" shall mean any court to which such action is appealed.

(2) Any offense under this act declared to be punishable on conviction under the summary jurisdiction acts may be prosecuted in the sheriff court.

(3) Proceedings for revocation of a patent shall be in the form of an action of reduction at the instance of the lord advocate, or at the instance of a party having interest with his concurrence, which concurrence may be given on just cause shown only, and service of all writs and summonses in that action shall be made according to the forms and practice existing at the commencement of this act.

(4) The provisions of this act conferring a special jurisdiction on the court as defined by this act shall not, except so far as the jurisdiction extends, affect the jurisdiction of any court in Scotland in any proceedings relating to patents or to designs; and with reference to any such proceedings, the term "the court" shall mean any lord ordinary of the court of session, and the term "court of appeal" shall mean either division of that court.

(5) Notwithstanding anything in this act, the expression "the court" shall, as respects petitions for compulsory licenses or revocation which are referred by the board of trade to the court in Scotland, mean any lord ordinary of the court of session, and shall in reference to proceedings in Scotland for the extension of the term of a patent mean such lord ordinary.

(6) The expression "rules of the supreme court" shall, except in section ninety-two of this act, mean act of sederunt.

(7) If any rectification of a register under this act is required in pursuance of any proceeding in a court, a copy of the order, decree, or other authority for the rectification, shall be served on the comptroller, and he shall rectify the register accordingly.

(8) The expression "injunction" means "interdict."

95. In the application of this act to Ireland—

(1) All parties shall, notwithstanding anything in this act, have in Ireland their remedies under or in respect of a patent as if the same had been granted to extend to Ireland only.

(2) The provisions of this act conferring a special jurisdiction on the court, as defined by this act, shall not, except so far as the jurisdiction extends, affect the jurisdiction of any court in Ireland in any proceedings relating to patents or to designs; and with reference to any such proceedings the term "the court" means the high court in Ireland.

(3) If any rectification of a register under this act is required in pursuance of any proceeding in a court, a copy of the order, decree, or other authority for the rectification shall be served on the comptroller, and he shall rectify the register accordingly.

96. This act shall extend to the Isle of Man, subject to the following modifications:

(1) Nothing in this act shall affect the jurisdiction of the courts in the Isle of Man in proceedings for infringement, or in any action or proceeding respecting a patent or design competent to those courts.

(2) The punishment for a misdemeanor under this act in the Isle of Man shall be imprisonment for any term not exceeding two years, with or without hard labor, and with or without a fine not exceeding one hundred pounds, at the discretion of the court.

(3) Any offense under this act committed in the Isle of Man which would in England be punishable on summary conviction may be prosecuted, and any fine in respect thereof recovered, at the instance of any person aggrieved, in the manner in which offenses punishable on summary conviction may for the time being be prosecuted.

REPEAL, SAVINGS, AND SHORT TITLE.

97. Nothing in this act shall take away, abridge, or prejudicially affect the prerogative of the Crown in relation to the granting of any letters patent or to the withholding of a grant thereof.

98. (1) The enactments mentioned in the second schedule to this act are hereby repealed to the extent specified in the third column of that schedule—

(*a*) As respects the enactments mentioned in Part I of that schedule, as from the commencement of this act;

(*b*) As respects the enactments mentioned in Part II of that schedule, as from the date when rules of the supreme court regulating the matters dealt with in those enactments come into operation;

(*c*) As respects the enactments mentioned in Part III of that schedule, as from the date when rules under this act regulating the matters dealt with in those enactments come into operation;

and the enactments mentioned in Part II and Part III of that schedule shall, until so repealed, have effect as if they formed part of this act: *Provided*, That this repeal shall not affect any convention, order in council, rule, or table of fees having effect under any enactment so repealed, but any such convention, order in council, rule, or table of fees in force at the commencement of this act shall continue in force, and may be repealed, altered, or amended, as if it had been made under this act.

(2) Except where otherwise expressly provided, this act shall extend to all patents granted and all designs registered before the commencement of this act, and to applications then pending, in substitution for such enactments as would have applied thereto if this act had not been passed.

99. This act may be cited as the patents and designs act, 1907, and shall, save as otherwise expressly provided, come into operation on the first day of January, one thousand nine hundred and eight.

Schedules.

FIRST SCHEDULE.

FEES ON INSTRUMENTS FOR OBTAINING PATENTS AND RENEWAL.

	£ s. d.	£ s. d.
(*a*) Up to sealing:		
On application for provisional protection	1 0 0	
On filing complete specification	3 0 0	
		4 0 0
Or		
On filing complete specification with first application		4 0 0
On the sealing of the patent in respect of investigations as to anticipation		1 0 0
(*b*) Further before end of four years from date of patent:		
On certificate of renewal		50 0 0
(*c*) Further before end of eight years from date of patent:		
On certificate of renewal		100 0 0

Or in lieu of the fees of £50 and £100 the following annual fees:	£	s.	d.
Before the expiration of the fourth year from the date of the patent.....	10	0	0
Before the expiration of the fifth year from the date of the patent.....	10	0	0
Before the expiration of the sixth year from the date of the patent.....	10	0	0
Before the expiration of the seventh year from the date of the patent.....	10	0	0
Before the expiration of the eighth year from the date of the patent.....	15	0	0
Before the expiration of the ninth year from the date of the patent.....	15	0	0
Before the expiration of the tenth year from the date of the patent.....	20	0	0
Before the expiration of the eleventh year from the date of the patent....	20	0	0
Before the expiration of the twelfth year from the date of the patent.....	20	0	0
Before the expiration of the thirteenth year from the date of the patent...	20	0	0

SECOND SCHEDULE.

Enactments repealed.

PART I.

Session and chapter.	Short title.	Extent of repeal.
46 and 47 Vict., c. 57.....	The patents, designs, and trade-marks act, 1883.	The whole act, except subsections (5), (6), and (7) of section 26, section 29, subsections (2) and (3) of section 47, and section 48.
48 and 49 Vict., c. 63.....	The patents, designs, and trade-marks (amendment) act, 1885.	The whole act.
49 and 50 Vict., c. 37.....	The patents act, 1886.....	The whole act.
51 and 52 Vict., c. 50.....	The patents, designs, and trade-marks act, 1888.	The whole act.
1 Edw. 7, c. 18.....	The patents act, 1901.....	The whole act.
2 Edw. 7, c. 34.....	The patents act, 1902.....	The whole act.
7 Edw. 7, c. 28.....	The patents and designs (amendment) act, 1907.	The whole act.

PART II.

46 and 47 Vict., c. 57.....	The patents, designs, and trade-marks act, 1883.	Subsections (5), (6), and (7) of section 26, and section 29.

PART III.

46 and 47 Vict., c. 57....	The patents, designs, and trade-marks act, 1883.	Subsections (2) and (3) of section 47, and section 48.

II. PROCEDURE IN REGISTRATION OF TRADE-MARKS.

Trade-marks in Great Britain are registered under the trade-marks act of 1905. This act provides that any person claiming to be the proprietor of a trade-mark who is desirous of registering the same must apply in writing to the registrar in manners which are prescribed by the law. The mark must be registered in respect of particular goods or classes of goods, and must contain or consist of the name of a company, individual, or firm represented in a special or particular manner, the signature of the applicant for registration or some predecessor in his business, an invented word or words, or any other distinctive mark or combination.

There is kept at the patent office, in compliance with the law, a book called the register of trade-marks, wherein are entered all registered trade-marks, with the names and addresses of their proprietors, notifications of assignments and transmissions, disclaimers, conditions, limitations, and such other matters relating to the trade-marks as are from time to time prescribed. This register is kept under the control and management of the comptroller general of patents, designs, and trade-marks, who is referred to in the law as the registrar.

The register is kept at all convenient times open to the inspection of the public, subject to prescribed regulations; and upon payment of certain fees certified copies

bearing the seal of the patent office of any entry in the register are furnished to persons requesting the same.

Under the law the registrar may refuse an application or may accept it absolutely, or subject to conditions, amendments, or modifications. Upon his refusal to register appeal may be taken by the applicant to the board of trade or to the high court.

When an application for registration of a trade-mark has been accepted, whether absolutely or subject to conditions, the registrar as soon as may be after acceptance causes the application as accepted to be advertised in the prescribed manner, the advertisement setting forth all conditions subject to which the application has been accepted.

Any person may, within a prescribed time from the date of the advertisement, give notice to the registrar of opposition to such registration; notice is given in writing and includes a statement of the grounds of opposition. The applicant and the opposer state their respective sides of the case to the registrar, who will decide on the merits of the case; and his decision is subject to appeal to the court, or, with the consent of the parties, to the board of trade. In an appeal the tribunal may permit the trade-mark proposed to be registered to be modified in any manner not substantially affecting the identity of such trade-mark, but in such case the trade-mark as so modified shall be advertised in the prescribed manner before being registered.

When an application for registration of a mark has been accepted, and the time for notice of opposition has expired, the registrar registers the trade-mark as of the date of the application.

The registration of a mark is for a period of 14 years. This term may be renewed for an additional 14 years from the expiration of the original registration.

On the registration of the mark the registrar issues to the applicant a certificate in prescribed form, sealed with the seal of the patent office.

Where two or more parties claim to be the proprietor of the same trade-mark, or of nearly identical trade-marks in respect of the same goods or description of goods, the registrar may refuse to register until their rights have been determined by the high court or have been settled by agreement in a manner approved by him, or, on appeal, by the board of trade. In certain cases, in the case of concurrent use of trade-marks, the court may permit the registration by more than one proprietor, subject to certain conditions and limitations.

ASSIGNMENT OF TRADE-MARKS.

A trade-mark when registered may be assigned and transmitted only in connection with the good will of the business concerned in the goods for which it has been registered, and is determinable with that good will. Provisions are made in law for the removal of trade-marks from the register.

Persons entered upon the register as proprietors of trade-marks have power to assign the same, and equities in respect of a trade-mark may be enforced in like manner as any other personal property. The registration of a person as proprietor of a trade-mark gives to such person the exclusive right to the use of such mark in connection with the goods in respect of which it is registered. In all legal proceedings relating to a registered trade-mark, the original registration of such mark after the expiration of seven years from the date of original registration is taken to be valid.

Except where expressly given by the provisions of the act of 1905, or rules made thereunder, there is no appeal from a decision of the registrar other than to the board of trade, but the court in dealing with any question of the rectification of the registrar has power to review any decision of the registrar relating to the entry in question or a correction sought to be made.

The registrar may, in case of doubt or difficulty arising in the administration of his duties, apply to the attorney general or solicitor general for England for directions in the matter.

Where an appeal is made to the board of trade, it may, in lieu of hearing and deciding it, if it thinks fit, refer such appeal to the high court, but unless the board so refers the appeal its decision is final.

The board of trade makes such rules and prescribes such forms as it thinks expedient for regulating the practice under the trade-marks act; for classifying goods for the purpose of registration of trade-marks for making or requiring duplicates of trade-marks and other documents; for securing and selling or distributing, regulating, and publishing, in such manner as it thinks fit, copies of trade-marks and other documents; and, generally, for regulating the business of the office in relation to trade-marks and all other things placed under the direction or the control of the registrar or of the board of trade itself.

TRADE-MARK APPLICATIONS.

The number of applications made in 1911 for the registration of trade-marks was 9,743, as compared with 10,623 in 1910.

During the year 5,066 trade-marks were advertised and 4,868 were registered. During 1911 the notices of opposition to the registration of trade-marks numbered 156 and 42 cases were heard. There were 7 appeals to the court and 1 appeal to the board of trade, which was subsequently referred to the court.

Under that provision of the law authorizing the grant of special trade-marks where any association or person undertakes the examination of any goods in respect of origin, material, mode of manufacture, quality, accuracy, or other characteristics, and certifies the result of such examination by mark used upon or in connection with such goods, there were 16 applications submitted.

The following table shows the number of applications for trade-marks made and the number registered from the years 1901 to 1911, inclusive:

Trade-marks.

Year.	Applications.	Registered.	Year.	Applications.	Registered.
1901	8,775	3,246	1907	10,796	6,255
1902	8,899	3,377	1908	10,645	5,965
1903	9,467	3,748	1909	10,880	6,112
1904	9,972	3,842	1910	10,623	5,722
1905	10,521	4,261	1911	9,743	4,868
1906	11,414	4,731			

III. Organization and Personnel.

The patent office is under the immediate control of the comptroller, who acts under the superintendence and direction of the board of trade. Any act or thing directed to be done by or to the comptroller may be done by or to any officer authorized by the board of trade. The law provides for the establishment of branch offices for designs at Manchester or elsewhere. The board of trade may, subject to the approval of the treasury, also appoint as many examiners, clerks, etc., as it sees fit, and may also remove any of the appointees. The salaries are appointed by the board of trade with the concurrence of the treasury. The establishment is divided into several branches. A first or general class is made up of the administrative and clerical system. The library is a section where the force is more particularly engaged in the selection of books, cataloguing, binding, and attending to readers.

The sale branch and warehouse, among other things, cares for the distribution of publications to public libraries, the sale of publications, deposit accounts, correspondence, and keeping of specifications, journals, etc.

The public office and register branch has supervision of searches, the receiving of documents, custody of specifications, patent register, issue of patents, office copies, *registration of* assignments, licenses, etc., renewal fees, and correspondence.

The examining branch has immediate charge of the examination of specifications and drawings, indexing, abridging, amendment of specifications, oppositions to sealing of patents, oppositions of amendments, acceptance of provisional and complete specifications, and correspondence.

The abridgments and printing branch has charge of the editing of volumes of abridgments, preparation of indexes, specifications, drawings, Illustrated Official Journal, quarterly and yearly indexes, and examination of certified copies of specifications and drawings.

Another part of the office has particular charge of designs, in which is made the examination of applications, the registration of designs, classifying designs, searchers for the public, and correspondence affecting the designs registered.

In the trade-mark division is handled the examination of applications, trade-mark journals, registration, oppositions, amendments, assignments, renewals, correspondence, and all matters affecting the registration of trade-marks.

The Manchester branch of the office handles cotton trade-marks and textile designs, where the applications for registration for these marks and designs are received, examinations of applications made, and correspondence conducted in relation to the same.

The patent office itself is divided, primarily, into two staffs—the permanent staff and the temporary staff. In the former class, in addition to the administrative officials, are included members of the clerical staff, examiners, office keepers, some messengers, etc., while in the temporary staff are second-division clerks, searchers of designs, boy clerks, messengers, firemen, charwomen, etc.

The British patent office is under the immediate control of the comptroller general, who acts under the superintendence and direction of the board of trade. The appointment of the comptroller general is made by the board of trade, subject to the approval of the treasury. The board also appoints as many examiners and other officers and clerks, with such designations and duties as it sees fit, and may remove any of those officers and clerks; and with the concurrence of the treasury appoint the salaries and determine the other expenses of the office, all of which are paid out of money provided by Parliament. The board makes all rules for regulating the practice of registration for classifying goods, for the purpose of designs; for making or requiring duplicate of specifications, drawings, and other documents; for securing and regulating the publishing and selling of copies at such prices and in such manner as it sees fit, of specifications, drawings, and other documents; for securing and regulating the making, printing, publishing, and selling of indexes to and abridgments of specifications and other documents in the patent office; and providing for the inspection of indexes and abridgments and other documents, and for regulating, with the approval of the treasury, the presentation of copies of patent office publications to patentees and to public authorities, bodies, and institutions at home and abroad; for regulating the questioning and the register of patent agents; and generally for regulating the business of the patent office and all things by the law placed under the direction or control of the comptroller or of the board of trade.

The comptroller general may, in any case of doubt or difficulty arising in the administration of any of the laws relating to his office, apply to a law officer (the attorney general or solicitor general), for directions in the matter. He may refuse to grant a patent for an invention or to register a design, of which the use would, in his opinion, be contrary to law or morality. The comptroller is required to submit a report before both Houses of Parliament before the first day of June in each year respecting the execution under him of the laws relating to patents and designs, showing an accounting of all fees, salaries, and allowances and other moneys received and paid, and he is required to issue periodically an illustrated journal of patented inventions, as well as reports of patent cases decided by courts of law, and any other information that he may deem generally useful or important; and he must keep on sale copies of such jour-

nal; also all complete specifications of patents in force, with their accompanying drawings; and to continue in such form as he deems expedient the indexes and abridgments of specifications previously published and to prepare and publish such other indexes, abridgments of specifications, catalogues, and other works relating to inventions as he may think fit.

The personnel of the patent office of Great Britain on the 1st of April, 1912, by organization units, was as follows:

	Salary.
General:	
1 comptroller general	£1,500
1 chief clerk	1,000
1 upper division clerk	400
1 staff clerk	345
33 clerks, abstractors, messengers, and other employees	60–350
113 boy clerks, boy messengers, and other employees	
Library:	
1 librarian	600
1 assistant librarian	430
20 assistants and attendants	70–330
3 messengers	
Sale branch and warehouse:	
1 superintendent	500
1 assistant superintendent	260
16 clerks, warehousemen, and abstractors	45–198
10 boy clerks and messengers	
Public office and register branch:	
1 principal	750
1 deputy principal	453
50 clerks, abstractors, and other employees	50–359
21 boy clerks	
Examining branch:	
4 supervising examiners	800
19 examiners	700
11 examiners	575–675
30 deputy examiners	420–550
196 assistant examiners	150–315
Abridgments and printing branch:	
1 principal	800
4 staff clerks	300–450
1 deputy examiner	540
29 clerks, abstractors, and other employees	60–320
20 boy clerks	
Designs and trade-marks registry:	
1 registrar of designs and trade-marks	1,000
1 principal	850
Designs registry:	
1 clerk of designs register	400
14 clerks, messengers, and other employees	65–304
4 boy clerks and boy messengers	
Trade-marks registry:	
6 upper division clerks	210–530
20 second division clerks	106–350
8 abstractors, attendants, and index clerks	72–114
13 boy clerks	

Manchester branch, cotton trade-marks and textile designs:	Salary.
1 keeper of cotton marks	£635
1 assistant keeper of cotton marks	350
14 clerks, searchers, and other employees	70–250
10 boy clerks, temporary sorters, and charwomen	

List of staff and amount of salaries, etc., for 1911.

No.	List of staff.	Amount of salaries, etc.		
		£	s.	d.
1	Comptroller general	1,500	0	0
1	Registrar of designs and trade-marks	1,100	0	0
1	Chief examiner	1,200	0	0
1	Chief clerk	1,000	0	0
3	Principals	2,360	7	0
1	Librarian	650	0	0
4	Supervising examiners	3,300	0	0
30	Examiners	20,355	11	5
32	Deputy examiners	15,625	11	10
197	Assistant examiners	44,806	19	4
7	Upper division clerks	3,009	18	2
1	Deputy principal	446	2	2
7	Staff clerks	2,481	12	8
1	Superintendent of sale branch	500	0	0
1	Assistant librarian	408	17	9
1	Clerk of designs register	400	0	0
75	Second division clerks	13,020	11	1
5	Minor staff clerks	1,227	19	7
12	Assistants in library	1,726	11	5
4	Searchers of designs	699	16	2
1	Record keeper	339	16	1
1	Superintendent of copying room	254	16	9
1	Deputy superintendent of copying room	195	11	5
1	Clerk of search cards	234	16	9
1	Shorthand writer	200	0	0
40	Abstractors	3,124	7	8
1	Draftsman	185	2	9
1	Stationery clerk	153	5	9
1	Office keeper	265	0	0
1	Deputy office keeper	123	5	9
38	Messengers, etc	3,736	4	11
4	Firemen	192	3	5
96	Boy clerks	4,266	19	0
41	Temporary messengers	1,414	0	2
44	Charwomen	1,315	16	0
....	Purveyor of luncheons	51	0	0
	MANCHESTER BRANCH.			
1	Keeper of cotton marks	609	12	5
1	Assistant keeper	347	6	2
4	Clerks	409	12	11
7	Searchers of designs	806	10	10
2	Searchers (permanent)	187	4	5
6	Searchers (temporary)	333	7	0
1	Office cleaner	36	8	0
679		134,602	6	9

Number of applications, patents issued, etc., 1901–1911.

Year.	Received.	Abandoned.	Void.	Accepted but not proceeded with to sealing stage.	Patents refused.	Patents sealed.
1901	26,788	12,571	194	8	20	13,995
1902	28,972	13,452	229	13	36	15,242
1903	28,854	13,501	225	10	14	15,104
1904	29,702	13,291	244	16	27	16,124
1905	27,577	10,830	1,372	447	14	14,914
1906	30,030	11,475	1,566	490	11	16,488
1907	28,915	10,638	1,528	531	18	16,200
1908	28,598	10,221	1,623	594	14	16,146
1909	30,603	11,326	1,862	608	11	16,796
1910	30,388	11,029	[1] 1,461	[1] 293	[1] 6	[1] 15,786

[1] These figures are still incomplete.

Receipts and expenditures for the year 1911.

Receipts.	£	s.	d.
Patent fees	283,203	16	0
Design fees	7,449	12	0
Trade-mark fees	15,990	8	2
Sale of publications	13,066	18	2
	319,710	14	4

Expenditures.	£	s.	d.
Salaries, etc	134,602	6	9
Pensions	7,798	0	0
Police	306	9	2
Law reporting	1,753	16	8
Incidental expenses, etc	2,186	10	2
Stationery, books, binding, and printing	36,600	0	0
Rent of offices, rates, taxes, and insurance	2,151	12	4
New work, etc	14,567	17	0
Maintenance, furniture, etc	5,012	18	10
	204,979	10	11
Surplus	114,731	3	5
	319,710	14	4

IV. Building Accommodations.

The patent office of Great Britain has been entirely rebuilt during the last 20 years and new blocks of buildings have been added from time to time to meet increasing requirements. The main structure, now occupied, was completed in 1911, and one further wing remains to be built.

The building is constructed of Suffolk brick with stone dressings for the principal elevations, the floors and roofs being of steel and concrete. On the completion of the new wing the building will cover nearly two acres of ground. The floor space on each of the three lower floors is about 40,000 square feet. The library is one lofty room with two galleries measuring 140 feet in length, 60 feet in breadth, and 50 feet in height. The office buildings have generally four stories, a basement, and a subbasement, but in some parts there are only three stories and a basement. There is a large warehouse for the storage of publications.

THE LIBRARY.

The library is provided mainly for the benefit of the public. It contains some 140,000 volumes, consisting principally of patent publications and scientific journals and textbooks. The bookshelves are steel stacks with movable brackets.

In 1911 the number of readers who made use of the library was 155,091. The number of volumes added to the library was 6,283, of which 1,273 were volumes of patent specifications, of patent journals, and 94 were trade catalogues. The remaining 4,916 volumes were scientific textbooks or periodicals, 3,799 being obtained by purchase and 1,117 by gift. The number of works in the library at the end of the year was 44,300.

A consolidation of the printed author catalogues of the library is in progress.

Increased use has been made of the duplicate sets of foreign patent specifications. An English translation of the complete scheme of the German patent specification of 1910 has been issued under the sanction of the United States Commissioner of Patents. Copies of this translation, with an index, have been placed in the library for the use of searchers. The Illustrated Official Journal of the 1st of September contained a complete table of the number lists of the United States patent classification which were available at that date in the library.

The number of specifications of the expired patents reprinted at the cost of the office, under the arrangement recommended by the departmental committee of 1900, was 717. In addition to these 2,635 specifications were reprinted for official purposes.

APPENDIX E.

DISCUSSION OF THE GERMAN PATENT LAW AND PATENT PROCEDURE.

By Prof. Dr. Albert Osterrieth
Of Berlin.

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PATENTS.

Historical Sketch.

The statutory patent law in Germany is of recent date. Before the establishment of the Empire patent laws existed in some States only. In most of them patents were granted, not under statutory law, but in an administrative way, by the grace of the Government to encourage or reward successful inventors or manufacturers. In some States patents had not been granted at all. The chief reasons for this were the political division and the belief of the dominant free-trade school that patents, being "monopolies" or "privileges," had to be considered as an obstacle to the free development of art and industry. The Union having been established, the manufacturers pressed hard upon the Government, which reluctantly gave way.

On May 25, 1877, the first imperial patent law was published. Complaints having been made on some points, especially with regard to the organization of the patent office, a new law, amending the first patent law, was passed on the 7th of April, 1891.

As the "Patentamt," still under the influence of the old conservatism with respect to patents, had established the practice of granting patents to technical inventions of considerable importance only, and as smaller inventions were left without protection it was deemed necessary to provide for additional protection by granting registration to certain small inventions, designated as "models of utility" (Gebrauchsmuster). This was done by law of June 1, 1891. Both laws are still in force. It will be shown, in the last chapter, that the Imperial Government is now preparing a revision of the existing patent and utility model law. In the following chapters I will deal with patents or inventions and the protection of models of utility, both being, generally speaking, forms of protection for inventions.

Summary of Existing Laws, Regulations, and Rules.

Patent law of April 7, 1891.

Provisions regarding procedure before the patent office and the requisites for applications have been issued by the Imperial Government and by the patent office (the latter on the ground of patent law, art. 20).

Regulation of July 11, 1891 (Kaiserliche Verordnung zur Ausfuhrung des Patentgesetzes vom 7. April 1891 und des Gesetzes, betr. den Schutz von Gebrauchsmustern, vom 1. Juni 1891, und vom 11. Juli 1891).

Regulation of December 6, 1891 (Kaiserliche Verordnung betr. das Berufungsverfahren beim Reichsgericht in Patentsachen vom 6. Dezember 1891).

Rules issued by the patent office November 22, 1898 (Bestimmungen des Kaiserlichen Patentamts über die Anmeldung von Erfindungen vom 22. November 1898).

Publication issued by the patent office November 22, 1898 (Bekanntmachung des Kaiserlichen Patentamts vom 22. November 1898).

Law on models of utility of June 1, 1891 (Gesetz betreffend den Schutz von Gebrauchsmustern vom 1. Juni 1891).

Rules concerning utility models issued by the patent office (Bestimmungen des Kaiserlichen Patentamts über die Ammeldung von Gebrauchsmustern, vom 22. November 1898).

Publication issued by the patent office November 22, 1898 (Bekanntmachung des Kaiserlichen Patentamts vom 22. November 1898).

General Features of the German Patent and Utility Model Law, with Special Regard to the Laws of Great Britain and of the United States.

As appears from what was said in the outset, the existing German patent law is not based upon national tradition and experience.

The Imperial Government in drafting the bill for the first patent law (1877) had to study the laws of the principal countries, to compare their respective provisions, to examine their working, and to construct a system which would seem most appropriate to the needs of national industry. Three laws in particular were considered—the British law, the French law, and the United States law.

The English practice, going back to the act of monopolies, had developed the principle that a patent might be granted for every new and useful invention. The French law of 1791 had for the first time given a legal construction to that right, defining it as a "property." The United States law of 1836 introduced a preliminary examination and created a special administrative service for the granting of patents.

There were, however, essential differences between these laws.

According to French law, patents were (and are still to-day) granted without any preliminary examination. Therefore granting a patent does not mean to give to the patentee any security. Patents are granted without guaranty of the Government (sans garantie du Gouvernement). Whether a patent is valid or not is in every case to be decided by the ordinary courts.

In America the commissioner can refuse a patent after an examination made by technical experts. It is true that a patent may be annulled afterwards and that non-patentability may be pleaded as a defense. Yet, if it appears to the commissioner that the subject applied for is not an invention or not new, the decision to refuse (subject to appeal) is final, with the effect that no patent is ever granted for a thing which obviously is not patentable. In France a patent may exist for years before (on an action brought in by the patentee or a third party) an examination is made; and that examination is never made by technical experts, but by the ordinary courts, who may or may not hear experts.

The German Government, after having considered these various systems, decided to follow the American system, and even to develop it in a formalistic way.

The question of validity of a patent is to be decided by the patent office only. Patents are granted by the patentamt on preliminary examination. Patents may be annulled, but only on an action brought before the patentamt. No court may annul or revoke a patent. A patent is protected against any infringement as long as it exists. A court may, in deciding whether some element is equivalent to another, give the patent a restrictive or a large interpretation. But the court is bound to recognize and to protect the patent, even if it appears to it that it has been granted by mistake. This is what is called in Germany the "constitutive" (attributive) effect of granting a patent.

The reason for adopting this system is that it is believed that a body of technical experts, trained in patent matters, is better prepared to decide technical questions than the ordinary courts, and that the concentration of jurisdiction on the validity of patents gives to the manufacturing classes a greater security than the possibility of diverse decisions issued by different courts.

The next important question to be considered was who may be entitled to apply for a patent.

According to English and American law a patent may be granted only to the first and true inventor. (In Great Britain the term "inventor" includes the person who imports into England an invention actually made by another.)

In America the applicant is required to make oath that he believes himself to be the inventor. In England the first applicant is presumed to be the first inventor. The question of priority between the applicant and another person claiming to be *the first* inventor is, in England and in America, referred to the ordinary courts (pro-

cedure of interference in the United States). In Germany it is believed that the question of priority ought to be decided by the same body which decides on the question of patentability, as such a decision involves an examination of the question as to which are the elements constituting the patented invention.

On the other hand, it seemed impossible to burden the patentamt with the charge of examining not only whether the subject of application is patentable, but to decide also the question who is to be considered as the author of that invention. It has been, furthermore, pointed out that by far most inventions are made within industrial works, under collaboration of different employees owing their knowledge and training to their employer, it being often impossible to decide which actually have been the parts contributed by each collaborator of the invention.

All these considerations have led the Government to adopt a wholly different system. The person of the inventor or of the first inventor is not taken in account at all. The patent is granted to the first applicant, whether he is inventor or not. There is only one provision made to secure the rights of persons from whom the invention has been taken. The adoption of this system has made it necessary to provide for securing rights based on prior use.

As to the procedure in the patent office, the American ex officio examination has been combined with the English system of appeal to opposition (introduced by the act of 1852).

The systems of "caveat" and of "provisional" specification (England) have not been adopted.

As the German legislator (Government and Reichstag) was always anxious to prevent troubles caused by the existence of too many patents, it has been considered necessary to make the duration of a patent depend upon payment of periodical and increasing fees amounting to a considerable sum and to provide for revocation in such cases where the patent would not be worked in a way proper to justify the "monopoly" granted in form of a patent. Details on this point are presented later.

Provisions of the German Patent Law.

SUBJECT OF A PATENT.

Article 1 of the patent law says:

"Patents are to be granted for new inventions that are susceptible of industrial use."

The term "invention" is not defined in the law. Substantially it means the same as "any manner of manufacture" (British law) and "art, machine, manufacture, or composition of matter" (United States). It does not include mere commercial or financial schemes—e. g., those used for advertisements.

As to the question of novelty, article 2 provides:

"An invention is not to be regarded as new if at the time of application it has (1) either been described in any printed publication of the last 100 years, whether German or foreign, or (2) been used in a way known to the public in Germany, and both done in such a manner that its use by other persons skilled in the art appears possible."

This definition of novelty is rather formalistic. Any invention which has not been described in a public print or used publicly in Germany is to be considered as new even if it is known to German manufacturers that the invention has been publicly used abroad or if, e. g., the invention has been mentioned in a lecture or made in a technical school.

Publication or prior user must precede the date of application in Germany. Any old American patent which has never been worked or spoken of or which has never been known to anyone in Germany constitutes an anticipation. In England disclosure in a printed publication in another country is not sufficient, unless such printed publication was actually received in Great Britain and made accessible to the public before the filing of application. Foreign applicants may, of course, claim the priority granted by internationl treaties, article 4 of Paris convention.

EXCLUDED FROM PROTECTION.

(1) Inventions contrary to law or morality.

(2) Inventions of articles of food and relish and of medicines. These include all articles for human consumption. Foodstuffs and medicines for animals are patentable. So, too, are processes and apparatus for producing such articles.

(3) All materials produced by chemical processes (mechanical mixtures, as, e. g., metal alloys are admitted as patentable). Chemical processes are patentable, so that if a man has invented a new chemical material he enjoys full protection as long as another man has not invented a new process producing the same article and not being equivalent to the first patented.

WHO MAY APPLY FOR A PATENT.

Article 3 says:

"The first applicant filing the application for a patent according to this law shall have claim to the grant of a patent."

It is immaterial whether the applicant is the inventor himself, or whether he is an individual or a firm, a partnership, or a corporate body.

Only in case the invention has been taken without consent from the descriptions, drawings, models, etc., of another, the aggrieved party may oppose the grant of the patent or file a petition for declaration of nullity. If, in case of such an opposition, the patent is refused to the first applicant, and if the aggrieved party himself files an application within one month after the delivery of the decision of the patent office, he may demand that his application be dated one day previous to the date of the publication of the prior application. (Art. 3.)

This provision has some importance for securing rights of servants who have made inventions. The necessity of deciding whether an invention belonged previously to the servant or his employer has led the courts to admit the existence of a sort of common law property of the inventor to his invention.

This right is supposed to pass to the master if the servant inventor appears to be bound by his contract of service to work which includes making inventions of such a character.

In England the mere fact of relation between master and servant gives no right to the master in the invention of his servant. (Rex *v.* Arkwright, 1785.)

PRIORITY.

A later applicant has no right to a patent for an invention covered by a prior application of another person, unless that first application has been rejected or withdrawn. As long as the first application is pending the later application is to be suspended. It has to be rejected if the patent on the first application is granted.

If the subject of an application is in part covered by a prior application, the right of the latter applicant is limited to the protection for that part of the subject matter which is not covered by the prior application.

This rule has to be observed by the patent office ex officio, whether the first applicant has filed opposition or not. It is based upon the principle that one and the same invention may only be patented once.

For the same reason it is immaterial whether the patent granted on a former application is still in force or not (except in cases where it has been annulled).

APPLICATION.

The application must be made in writing and must be filed at the patent office in Berlin, accompanied by a specification in German and, if required, with drawings.

If the applicant is not residing in Germany, the application must be presented by by an agent residing in Germany and appointed by power of attorney.

The application must contain:

(1) A petition for the granting of a patent, indicating the subject to be protected.

(2) The description or specification sufficiently detailed to enable the invention to be practiced by persons skilled in the art.

(3) The claim indicating that which is to be protected by the patent.

(4) Drawings or models, etc.

Regarding the wording of claims the patent office disapproves of the American system of enumerating the elements forming the invention. It requires a rather logical definition, reciting first the common or generic type to which the improvement is applied, and indicating thereafter in a subordinate clause the characteristic feature of the new invention.

It is to be remarked that this system has of late been criticized by competent authors who are preferring the American system. In England the patent act provides that any specification must end with a distinct statement of the invention claimed. Yet this provision is only considered to give a direction. A failure to comply therewith will not invalidate the patent. In France the "revendication" is only a résumé of the specification.

Only one invention can be claimed in the same application. Unity of invention has been understood by the patent office as meaning technical unity. But it has been argued of late that industrial or economic unity should be sufficient.

Alterations in the detail of the specifications may be made until the decision ordering publication of the application. If the alterations are material, changing the nature of the invention described, a new application will be necessary.

For full particulars on the requisites of application see rules and publication of November 22, 1891.

PROCEDURE IN THE PATENT OFFICE UPON APPLICATIONS.

There are two resorts for deciding on the grant or refusal of a patent, the "division for application" (Anmeldeabteilung) and the "division of appeals" (Beschwerdeabteilung).

In the "division for application" there is a double procedure. The application is first examined in a provisional way by one member of the division, called the "Vorprufer"—"preliminary examiner." He has to prepare the decision of the division, but can not give a decision himself. This preparing work finished, the application, with all documents and notes referring to it, is communicated to the division which decides in the first instance. This decision is subject to an appeal, which goes to the "division of appeals." The decision of this latter division is final. There is no further appeal. Courts never are called upon to decide on questions of granting or refusing a patent.

The whole procedure on applications is a strict "ex officio" procedure. Both divisions have to do all that is necessary in order to reach a decision, make investigations, hear witnesses, experts, etc.

Neither the applicant nor the opponent is treated as a "party." They can not claim to be heard, at least in the first resort.

Applications coming in are marked with the date and are given a current number. These records determine the priority of the application. If two applications on the same subject are received on the same day, the one marked with the lower number will be considered as the first one.

The bureau of reception (Annahmestelle) refers every new application to the proper division for applications (Anmeldeabteilung) according to the character of the invention. The whole subject of patents is divided into 89 classes and 8,000 groups. This classification has a mere administrative character. It has no effect on the extent of protection.

The president of the Anmelde-Abteilung refers the application to the preliminary examiner (Vorprufer). The latter has to verify whether the formal requisites of application are complied with and to examine whether the subject of application is an industrial invention and whether it is new, investigating the printed patents of all countries and the other technical literature relating to the particular art.

He will communicate his doubts or objections to the applicant, either in an informal way, orally or by letter, or by a note of rather formal character, the so-called "Vorbescheid." This means a sort of "preliminary decision," wherein a term is fixed within which a reply must be filed. Extensions of this term may be obtained. If the applicant fails to reply within the fixed term he is supposed to have withdrawn his application and the procedure is closed. The preliminary examination being completed, the case is submitted to the application division, where another member is appointed as reporter.

The application division has to examine the application independently from the views expressed by the examiner.

If it appears to the division that the application should be rejected it must give a decision of refusal. The preliminary examiner, though being a member of the division, is not allowed to take part in the vote if he has given a "preliminary decision" (Vorbescheid). The decision has to be delivered to the applicant with arguments justifying the refusal.

If it appears to the division that there is no objection against granting the patent, the division has to order the publication of the application. The publication is advertised in the Imperial Gazette (Reichsanzeiger). The file containing the documents in connection with the application is laid open to inspection in the patent office. Publication may be delayed for six months subsequent to the date of the decision to publish the application. A request for a delay of three months can not be refused.

The publication has the following effect:

(1) From the date of publication the applicant enjoys full protection as if the patent were already granted. This protection is, of course, of a provisional character. It ceases with retroactive effect if the patent is later refused (because of opposition filed).

(2) The first annual tax is due and has to be paid by the applicant within a period of two months from the date of publication.

(3) Within the same period a notice of opposition may be filed by any person on the ground that the invention is not patentable; that it makes application of forms already subjects of prior applications or patents, or that the applicant has taken the invention away from another person. In the latter case only the injured party can enter opposition.

If no opposition is entered, or if the division has duly examined the ground of opposition, it renders a decision granting or refusing the patent.

From the decision of the application division either the applicant or the opponent may appeal to the division of appeals. This division has to reexamine the whole case. It is bound to hear the parties, if they have not been heard in the first resort. The decision of the division of appeals is final.

If the decision either of the application division or of the division of appeals is in favor of the applicant, the specifications are printed and letters patent are sealed. The patent is published in the Imperial Gazette and in the Patentblatt. It is furthermore registered in the register of patents (Patentrolle).

If the patent is refused the first annual tax is refunded to the applicant.

ANNULMENT AND REVOCATION OF A PATENT.

A patent may be annulled or revoked. The difference is that, in the first case, the annulment is of retroactive character; that is to say, that its effects are drawn back to the date of granting, as though the patent had not existed (except in case when the patent has been annulled on the ground that the applicant had taken the invention

away from another person). All dispositions based on the legal existence of the patent, contracts, transactions (in case of infringement) may be invalidated. If judgments have been issued on the ground of an infringement—by civil or criminal courts—the decision may be reversed by an actio restitutoria.

Yet the fact that the patentee has enjoyed an exclusive right during the existence of the patent is not to be annulled. Therefore the fees the patentee has paid already are not to be paid back. In case the patentee has granted licenses to third parties the decision will depend upon the appreciation of the circumstance of fact; for instance the fact that the licenser has for some time practically enjoyed an exclusive license will have to be considered in determining whether the patentee shall pay back license fees or pay damages. The revocation produces a legal effect only from the date on which the revoking decision enters into force.

ANNULMENT.

A patent may be annulled if it ought not to have been granted at all, namely—
(1) If there is no patentable invention.
(2) If the invention has been the subject of a former patent.
(3) If the essential elements of the application had been taken away without consent from the specification, drawings, etc., of another person.

If these causes of nullity concern only a part of the patented invention the declaration of nullity will be restricted to that part.

A petition of nullity may be entered in the first two cases by every person; in the third case only by the aggrieved party.

The validity of a patent can not be challenged on the first ground after the expiration of five years from the date of publication of grant of that patent.

It appears from this statement that a patent granted on a thing which was no invention or not new at the date of application, which in fact had been granted only by error, is transformed, by the mere lapse of five years, into a valid patent. (No provision is made for the amendment of the specifications after the grant of the patent (disclaimer).)

PROCEDURE IN ANNULMENT CASES.

There are two resorts for annulment cases, the nullification division in the patent office and the supreme court (Reichsgericht), Leipzig. This is the only instance where the question of the validity of patents is referred to the jurisdiction of an ordinary court (the divisions of the patent office being considered as special courts).

Though nonpatentability is an absolute legal ground for rejecting an application, and though the patent office has ex officio to make investigations with regard to patentability, a case of nullity is opened only upon a petition.

A petition for a declaration of nullity is to be presented to the patent office. It must contain: Description of the attacked patent, the petition proper, the grounds upon which nullification is based (e. g., anticipation by prior publication), and the specification of facts evidencing that cause (e. g., title and content of print). On presenting the petition a fee of 50 marks for every attacked patent is to be paid, unless the petition is not accepted. If the petitioner has his domicile abroad he must at the demand of the patentee deposit security for the costs of the proceedings.

The patent office (nullification division) communicates the petition to the patentee, requesting him to reply within one month. If he fails to reply decision may ensue, according to the petition and without summoning and hearing the parties, and all facts asserted by the petitioner may be considered as proved.

If the patentee replies in due time, or if decision has not been given in accordance with the petition, the nullification division has to do what is necessary for investigating the matter. It may cause witnesses and experts to be heard. In that case the provisions of the code of civil procedure are to be observed. The parties are

to be summoned and heard. In the decision the nullification division has to fix the amount of costs to be paid by either of the parties.

The decision of the nullification division is subject to appeal which will be heard by the imperial supreme court. The appeal is to be entered at the patent office, with a statement of reasons, within six weeks after the delivery of the decision. The patent office communicates the writ of appeal to the other party, requesting him to reply within one month, presenting his motions and specifying the new facts he wants to invoke. The motions and specifications of both parties, together with all documents referring to the cases, are then to be communicated to the Reichsgericht, which has now to make the necessary investigations and to summon the parties to a hearing within two months. According to the principle that this special procedure before the supreme court is an ex officio procedure, the court, in deciding the case, is not bound to consider only those facts which have been asserted by the parties. T e decision is to be pronounced orally.

REVOCATION (WORKING CLAUSE).

In the English privilege granted in 1563 to George Gylpin and Peter Stoughberken in England for "ovens and furnaces" we find the clause that the privilege shall be void if the patentee should not set to manufacture within two months after granting the patent. Similar clauses are to be found in numerous privileges. In the French royal decree of 1762 the general principle is laid down the first time that patents shall be revoked if they are not worked within one year after being granted. In France this rule has been maintained up to the present day.

Yet it must be borne in mind that the first patents or privileges were not only granted for new inventions, but that they were gifts of a mere arbitrary character, and that, of course, they could be loaded with any arbitrary conditions. Such was the situation in England until 1623 and in France until the great Revolution. In France the maintenance of that old clause and its introduction into modern legislation had another purpose. It was caused by the belief of the protectionist school that patent law could be employed as an expedient to attract new manufactures from abroad.

When the first German patent law was issued in 1877, it seemed necessary to make special provisions against the excessive increase of patents which might encumber national industry. It was therefore said in the patent law of 1877 that a patent could be revoked after the expiration of three years if the patentee fails to work his invention in Germany to a suitable extent or at least to do everything that is necessary to insure its being worked. Our great philosopher Kohler has developed the theory that obtaining a patent involves the social duty to work it for the general benefit.

But the facts proved stronger than theories. The experience of the last 30 years have shown us that the legal obligation of working had no practical result at all save to weaken the protection which the law was meant to give. Cases where a man takes a patent in order to suppress an invention can not be taken into serious consideration. In fact very few patents have been revoked in Germany for nonworking (one patent out of more than 2,000). On the other hand, the working clause always threatens the patentee, hanging over his head like the sword of Damocles, as a great expert in patent matters, the late M. von Schütz, once said. Besides, experience has shown that petitions for revocation are mostly entered by patent infringers, using the working clause as a defense.

This explains why in the last 15 years there has been a very strong movement in Germany for abolishing the working clause. This first induced the German Government to abolish the obligation of working by international treaties in the relations with Italy, Switzerland, and with the United States. And finally the old working clause of the first patent law was abolished by the law of June 6, 1911, on the working of patents (Das Gesetz betreffend den Patentausfuhrungszwang, vom 6 Juni 1911).

Since this law came into force, i. e., the 1st of July, 1911, no obligation of working a patent exists in Germany. No patent can be revoked on the ground that it is not being worked. Yet, considering the legislation of some countries which threaten foreign patentees with revocation of their patents if the invention is exclusively or mainly manufactured abroad, the German Government resolved to provide for a similar clause, applicable at least against such countries where German manufacturers have to suffer from such legislation.

It has therefore been stated in the above-mentioned law of 1911 that a patent can be revoked, as far as international treaties do not provide for the contrary, if the invention is exclusively or mainly manufactured or carried out outside the German Empire and its possessions.

This clause does obviously not apply to citizens of the United States, even if an American has acquired a German patent from a patentee belonging to another country. Yet this might lead to abuses. Therefore there has been provided a complementary clause, saying that transferring a patent to another person is ineffective if this transfer has been made only with the intention of avoiding revocation.

According to the provisions of the Paris convention such a revocation can not be pronounced before expiration of the term of three years after the grant of the patent.

PROCEDURE IN REVOCATION CASES.

The procedure is similar to that in annulment cases.

COMPULSORY LICENSE.

According to the former German law a patent could be revoked, after expiration of three years from the date of granting, if it appeared in the public interest that permission to use the invention be granted to others but the patentee refused to give such permission in return for adequate remuneration with adequate security. This clause has proved most ineffective, as no single case of revocation of a patent on this ground has been known. Therefore, when the abolition of the working clause was discussed, it was suggested to do away also with that clause on the obligation of granting licenses. It was objected that cases might happen where the use of a patented invention by others than the patentee could be necessary for the public welfare, for instance, manufacturing a certain drug in case of an epidemic.

This consideration seemed to justify the insertion of the following clause in that new law of 1911:

"If the patentee refuses to grant license to another for using the invention upon the offer of an adequate compensation and security, such grant for using the invention can be allowed (compulsory license), if such granting seems necessary in the public interest. The grant may be limited or subject to special conditions."

The procedure in cases of compulsory licenses is the same as in cases of revocation or annulment. The petition goes in first resort to the nullification division of the patent office, in second to the supreme court.

TERM OF PROTECTION AND FEES (PATENTS OF ADDITION).

The duration of a patent is 15 years. But this is only the maximum of protection. To continue the patent in force during this time renewal fees must be paid annually. If the patentee fails to pay the respective annual fee the patent expires. The term begins with the day following the day of filing the application.

Patents of addition are granted for improvements in or developments of a patented invention but only to the registered proprietor of the prior patent to which they refer. Such patents of addition continue in force with the principal patent without payment of renewal fees. If the principal patent is annulled, patents of addition may be maintained as independent patents and are then subject to payment of renewal fees.

FEES.

(1) The applicant in filing his application has to pay an application fee (Anmeldegebühr) of 20 marks. It is not strictly necessary to pay the application fee in entering the application. But the payment can not be postponed, nor the fee remitted.

(2) The first annual fee (to be paid within two months after publication) is 30 marks.

(3) The fee for the second year is of 50 marks, and the following fees are increasing 50 marks per annum for every additional year, they amount in the fifteenth year to 700 marks, and for the whole term of protection to 5,280 marks.

(4) A patentee who proves his want of means may have a respite in the payment of the first and second year until the third year, and if the patent expires in the third year, they may be remitted entirely.

(5) The annual fees are to be paid within six weeks after falling due, that is after the date of the beginning of the next patent year, the patent year beginning with the date following the day of entering the application. It will be observed that the term of the patent and the payment year begin with the application, but protection begins with publication. If the decision of granting is issued some years after publication, fees for all this time fall due the day the decision enters into force.

After expiration of the term of six weeks the payment can be effected, but an additional legal fee of 10 marks must be paid, these payments to be made within a further period of six weeks. If the payment is not made within this second term of six weeks (12 weeks after having fallen due) the patent expires.

Payment can be made in cash, to the treasury of the patent office or at a post office in Germany for transmission to the treasury. Payment made by letter of credit, or from abroad, is considered as effected only when the cash is received at the treasury of the patent office.

For the convenience of the public the patent office opens an account for patentees, where they can make deposits. If the patent is abandoned or declared void, the fees paid in advance are refunded.

Furthermore the patent office has an account at the imperial bank (Reichsbank), where payments are accepted.

EFFECT OF PATENT.

A patent has the effect that the patentee is exclusively entitled to manufacture the subject of the invention industrially, to deal in, to offer for sale, or to use the same; if the patent is granted for a process, the patent extends also to products manufactured directly by the process.

Any manufacturing or using the subject of a patent without the consent of the patentee is considered as an infringement.

RESTRICTIONS.

Right of personal possession or of prior user (Vorbenutzungsrecht).

Any person who, at the date of application of a patent, had already used the invention in Germany or made the necessary preparations for such use, has the right to use the invention for the requirements of his own business in his own works or in the work of other persons; this right can only be transferred together with the good will of the business.

It will be remembered that this right of prior use has particular importance, in order to secure the right of the inventor who is deprived of his rights by the application made by the first applicant. Yet prior use does not suppose making the invention. It is immaterial whether the person who has previously used the invention has made the invention himself or whether he has acquired it otherwise (except illegally).

A patent will not prevent the use of an invention for the army and navy or otherwise in the interest of the public welfare in case the Chancellor of the Empire should

so decide. In such case, however, the patentee can claim an adequate compensation, the amount of which is determined by the courts in case of disagreement.

A patent does not avail to prevent the use of an invention in vehicles or vessels which come into Germany only in course of transit.

TRANSFER—PATENT REGISTER.

A patent may be transferred to another person by succession or assignment.

In the patent office a register (roll) is kept where is to be entered the subject matter of the patent, the duration, the name and address of the patentee, the name of his representative, the commencement of the patent, the termination or expiration, the decision of annulment, and the revocation.

When a change takes place in the ownership or representation of the patentee, this is to be entered in the register (and published in the Official Gazette), if brought to the knowledge of the patent office in duly testified form.

As long as this is not done, the former patentee remains alone authorized and liable according to the provisions of the law.

The inspection of the register and of the specifications, drawings, models, etc., upon which patents have been granted, is open to everybody, unless the patent has been taken out in the name of the imperial administration for purposes of the army and navy.

REMEDIES IN CASE OF INFRINGEMENT.

Civil remedies: Injunction, in any case of infringement; damages, in case the infringer has acted knowingly or by gross negligence.

Criminal: In case the infringer has acted knowingly and deliberately he is liable to a fine not exceeding 5,000 marks, or imprisonment not exceeding one year. Proceedings are opened only upon petition of the injured party.

Instead of damages the court may on request of the aggrieved party adjudicate, besides the ordinary fine, payment of a compensation (Busse) not exceeding 10,000 marks. Such compensation being fixed, all further claims for damages are excluded.

The term within which an action may be brought for an infringement is limited to three years with regard to any single case by which such action may be supported.

FALSELY MARKING AS A PATENT.

Marking of a patent is optional. False marking of an article as covered by a patent is punishable with a fine not exceeding 1,000 marks.

MODELS OF UTILITY.

A special form of protection for "models of utility" is to be found only in Germany and in Japan. English "designs" may comprise useful designs.

SUBJECT MATTER.

Inventions of new shape, new arrangement, or new device of useful articles or implements.

Difference from subject matter of patents: (*a*) No real technical effect wanted, any substantially new useful effect being sufficient; (*b*) no processes to be protected as models.

Difference from industrial models and designs: Measure of novelty in models of utility is utility, in industrial designs or models (ornamental designs) the artistic or esthetic effect. Both effects may be combined, and each protected independently from the other.

NOVELTY.

Substantially the same as in patentable inventions; only anticipating literature not limited to the last 100 years.

PROTECTION.

Granted to the first applicant, whether he is inventor or not.

A person having no residence or establishment in Germany can claim protection only if in the country where he is resident or established German models enjoy protection, and if this fact has been recognized by a statement published in the Imperial Gazette. Protection is granted to all persons belonging to a country of the Paris Union.

(In case of patents no distinction is made between German citizens and foreigners.)

PRIORITY.

Protection is granted to the first applicant. However, contrary to the respective provisions regarding patents, a later application on the same model is not void, and is not to be annulled; but the later applicant can not claim protection or exercise his right without consent of the first applicant. His right is "dependent" upon that of the first applicant. If the right based on former application expires, the latter applicant may exercise his rights (unless novelty of his model was anticipated by publication or prior use). The same rule is to be applied in case of conflict between a patent and a utility model.

If the applicant has taken away without consent the subject of his application from the specifications or drawings, etc., belonging to another, the protection based on this application shall not affect the aggrieved party.

Protection is granted only to such useful designs as have been registered in the patent office.

REQUISITES OF APPLICATION.

(1) Written petition giving the title of the model and a short designation.
(2) Specification of the new shape, arrangement, or device claimed.
(3) Drawings or copy of the model.
(4) A fee of 15 marks.

An applicant having no residence or establishment in Germany must secure a representative.

A special application is required for every model.

There is no preliminary examination except regarding the formal requisites of application. If the application is in compliance with the formal provisions, the utility model is to be registered at the register of models of utility (Gebrauchsmusterrolle), kept at the patent office.

Registration includes the title of the model, the name and residence of the applicant, and the date of application. Changes of ownership are to be noted in the register. The register is open to public inspection.

Registrations are published in the Reichsanzeiger and in the Patentblatt.

DURATION OF PROTECTION.

The duration of protection is three years, the period beginning the day following the date of application. On payment of a further fee of 60 marks, prior to the expiration of that term, an extension of the period of protection for another three years will be granted. The maximum term of protection is therefore six years. The extension is to be registered.

Registration is a condition of protection, but does not secure protection, as the patent office does not examine the application and can not decide on its validity.

The question whether registration is valid is only to be decided by the courts (1) either in a case of infringement, or (2) in the case of an action brought before the court (of residence of owner), in order to get the registration of the model declared void. Such an action may be entered by any person (in case where the subject of application had been taken away, only by the injured party).

In the first case, if nonvalidity is pleaded as a defense, the judgment has effect only inter partes; in the second, the court orders the registration to be canceled. The action to get registration of a model canceled may also be introduced in a case of infringement, so that the defense is transformed into an attack.

The effect of valid registration is that the owner of the registered model has the exclusive right to copy his model and to sell or offer for sale copies.

The remedies are the same as in cases of patent infringements.

TRADE-MARKS.

HISTORICAL SKETCH.

(The German trade-mark law was published in the Official Gazette of the United States Patent Office, vol. 71, p. 145.)

Before the establishment of the Empire there existed only a few trade-mark laws in Germany. The first imperial law was passed in 1874.

The now existing law is of May 12, 1894 (Gesetz zum Schutz der Warenbezeichnungen vom 12. Mai 1894.)

This law reveals the same strictly formalistic character evident in the German patent law. It is based upon the principle that there is no trade-mark protection without registration, and that any registered mark is to be strictly protected, even if another man had used that mark lawfully and honestly years before the first applicant.

Whoever wants to get a trade-mark registered has to enter an application at the patent office. Before registration the mark has to be examined. Registration is granted to the first applicant; the owner of a registered mark can oppose the registration of the same mark by another.

Registration has an attributive effect. The owner of the registered mark has the exclusive right to use that mark for the goods for which he has claimed registration. This protection is granted as long as registration is not canceled.

The duration of registration is 10 years; after expiration registration may be renewed for another term of 10 years and so on.

The registration fee is 30 marks; the renewal fee is 10 marks.

Registration may be canceled on a motion of the owner or ex officio, or on the ground of the judgment of a court pronounced upon an action of a third party.

It was believed when this law was made that the principal object of a good trade-mark law should be to provide for such a regulation of the use of trade-marks that every man should be able to know, on inspecting the public register, whether a mark was protected or not. If a mark had not been registered, it would be the fault of the owner; Lex vigilantibus scripta.

The last 10 years have produced a complete change of opinions. This was due to the development of legislation and jurisdiction on matters of "unfair competition."

Whereas in other countries, as in France, England, and the United States, the remedies of common law were held to be applicable to cases of dishonest competition, the German Supreme Court refused every protection which was not based on a strict statutory provision. Yet protection was necessary. So a special law had to be enacted, the law of May 27, 1896, against unfair competition. (Gesetz zur Bekämpfung des unlauteren Wettbewerbes.)

The practice based on that law (which since has been supplemented by the law of June 7, 1909) has developed principles strictly contrary to the tendency of the trade-marks law.

It is generally recognized now that protection should be given against any act of unfair or dishonest competition, and that especially employing distinctive signs (trade names, badges, etc.) which another has used in a way proper to create confusion with this man's goods or establishment, should justify an action for an injunction and for damages. This latter principle is confirmed by a formal provision of the

law of 1909, but with the reserve that trade-marks are excepted from that large protection, and that they shall still be protected only under the trade-marks law. This situation can obviously not be maintained. And for that reason the Imperial Government is preparing now a new law in which the principles for repressing unfair competition shall form the ground for establishing a new trade-mark protection. The bill will probably be published in some months, so that I can not give further details on that subject. Yet I venture to suggest that the following statement on the procedure in trade-mark matters concerns a system which is expected to disappear in a short time.

REGARDING REQUISITES OF APPLICATION.

I may refer to the imperial decree of June 30, 1894, the regulations issued by the patent office of November 22, 1898, and the publication of the patent office of November 22, 1898.

PROCEDURE OF REGISTERING TRADE-MARKS.

There are two resorts: The division of trade-marks and the division of appeals.

In the first resort the preliminary examination is made by a single examiner; the decision is to be issued by the trade-mark division.

The application entered at the patent office is referred to the division corresponding to the respective class of goods (classification of 42 classes) and to the examiner.

The examiner examines first whether the mark is in compliance with the statutory provisions. Registration is to be refused if the mark is not distinctive, if it is a mark of public use (Freizeichen), if it is composed only by numerals or letters, if it is descriptive, if it contains public coats of arms, or if it is deceptive. If it appears to him that there is an objection to registration, he may deliver a preliminary decision (Vorbescheid).

If there is no objection the application is communicated to the trade-marks division.

At the same time a search is made whether the mark has already been registered (or applied for) for the same or similar goods. In order to enable such search there have been established literary catalogues of all word marks, and of terms expressing notions represented by different marks, and graphic tables of the figures represented in the registered marks (e. g., one table containing all figures of lions, elephants, etc.).

If it appears that a mark for which an application has been filed or that a similar mark has been already registered for the same or similar goods, a written notice is given to the owner of such a mark. There is no publication for opposition in vogue to-day; but it is expected that it will be introduced in the new law. Such owner of a mark, who has received a notice, may within the term of one month after delivery, file an opposition. It is to be observed that an owner who has received no such notice has no right to make opposition, even if his mark is identical with that for which application has been entered. If the owner who receives notice does not oppose within the term above said, the mark is to be registered. If he does file an opposition, the trade-mark division has to decide on the question of identity.

If it appears to the division that both marks are similar or identical, the application is to be rejected. If the applicant is of opinion that the owner of the previously registered mark declared identical with his, is not entitled to form an opposition—e. g., in case of a prior contract, he has to sue against the opponent before the ordinary courts. The trade-mark division has only to decide the question of identity and no other questions referring to the case.

It will be seen from this, that the fact of a mark having been registered already for another is not an absolute obstacle to registering that mark. Practically the same mark may be registered for different people, for the same goods, unless the owner of the mark first registered files opposition.

The trade-mark division is not bound to communicate the opposition entered to the applicant; it may render a decision without having heard the parties.

The opponent can withdraw his opposition.

The decision of the trade-mark division is subject to appeal. The writ of appeal is to be filed within one month from delivery of the decision. Within the same term the appellant has to pay the "appeal fee" (Beschwerdegebühr) of 20 marks, unless his appeal is not accepted.

The division of appeals investigates the case. Its decision is final.

If there is no ground for rejecting the application, the mark is to be registered in the trade-marks-register (Zeichenrolle). Registration is published in the Imperial Gazette and in the monthly "Warenzeichenblatt."

In the register of trade-marks are to be entered:

(1) The date of application.

(2) The deposits annexed to the application (designation of the good will for which the mark is to be employed, the list of goods, a representation of the mark, and if necessary a description of the mark.)

(3) The name and residence of the owner or his representative, and any changes thereof.

(4) The date of renewal.

(5) The date of cancellation.

The inspection of the register is free to the public.

ASSIGNMENT.

The right based on registration can be transferred only with the good will.

The transfer is to be recorded in the trade-marks register. As long as this has not been done, the assignee can not claim any right on the ground of registration.

The change of ownership has to be entered if the consent of the registered owner to do so has been proved to the satisfaction of the patent office.

CANCELLATION.

Registration is canceled:

(1) On petition of the owner.

(2) Ex officio:

(*a*) If the term of 10 years has expired without renewal; yet cancellation does not follow ipso jure.

When the term of 10 years has expired, the patent office has to give notice to the registered owner, who can now, within one month after delivery of that notice, secure a renewal of registration by payment of an additional fee of 10 marks.

In that case the date of renewal is drawn back to the day of expiration of the former term.

The decision ordering cancellation, issued by the trade-mark division, is subject to appeal within the term of one month.

(*b*) If the registration of the mark ought to have been refused, that is to say, if application has been accepted by mistake (if it was no distinctive sign, a mark in public use, consisting merely of letters or numerals, a descriptive mark, a mark containing public coat of arms, or a deceptive mark).

Properly, in pursuance to the construction to the German trade-mark law, the patent office ought to proceed in such a case to canceling ex officio, without waiting for a petition of a third party. It has, however, been a standing rule in the practice of the patent office to open a procedure for canceling a mark on this ground, only upon a motion of the third party, which of course is not a legal petition or action, but rather an informal suggestion (Löschungsanregung). In consequence thereof the person making that motion is not considered as a party in the case; he has no claim to be heard; nor could he form an appeal. Yet, for consideration of equity and expediency, the patent office has, without a very strong legal ground, accepted appeals, not only

from the owner of the mark to be canceled, but also from the party having motioned cancellation.

3. Upon decision of a court:

(*a*) If the registered mark is identical or similar to a mark previously registered for another for the same goods, the owner of that mark may enter an action before the ordinary court to get registration canceled. Thus the owner of a trade-mark has two remedies to prevent his mark from being registered by other persons. He can, as already stated, form opposition in case he has received notice that a similar mark to his has been applied for, and he can, if such a mark has been registered, get that registration canceled, in an ordinary lawsuit.

(*b*) If the owner of a registered mark has given up the business to which the mark belongs, any person may bring in an action in order to get this mark canceled. In that case a petition to that effect may be lodged first at the patent office which has to give notice to the owner. If the same does not oppose within one month from receiving this notice cancellation has to be ordered. If he opposes, the petitioner will have to introduce an action before the court, at the place of residence of the trade-mark owner.

(*c*) If the mark has proved, since registration, to be deceptive, any person may, by way of an action, demand cancellation. If the deceptive character of the mark is evident at the time of application, the patent office refuses registration; or, if the patent office failed to see its obviously deceptive character, it has to proceed ex officio to cancellation upon suggestion made by a third party after registration.

(*d*) If registration of a mark constitutes an infringement to any right of another—copyright, right on firm, name, etc., or if the application has been made with a fraudulent intention or in a way contrary to morality, the aggrieved party, in some cases (provided for in the law of unfair competition) any person—may demand cancellation, introducing an action before the ordinary courts. In all the cases mentioned under No. 3 the patent office has to order cancellation upon presentation of the judgment of a court declared executory.

Cancellation of a mark is to be recorded in the register and to be published.

REMEDIES AGAINST INFRINGEMENT.

Remedies in case of infringement are similar to those in case of patent infringement. These remedies are discussed elsewhere.

CONCLUSION.

I have mentioned already that there has been of late a strong movement in Germany in favor of a revision of our trade-marks law and that the Imperial Government is preparing a new bill.

The explanations given above, as short as they are, show that provisions of our law are not altogether satisfactory or consistent.

It is desired that there be secured in the future a double protection—as it exists to-day in the United States, in England, France, shortly in most countries—a technical protection based on registration and a protection based on the principles of common law relating to unfair competition. Regarding technical trade-mark protection important alterations have been suggested:

(1) In the first place it is desired that there be introduced a procedure of protest, supplementing the present system, under which searches regarding conflict with formerly registered marks are made by the patent office, the latter being so burdened with examinations whose results can never be exact or complete that many cases of conflict are neglected and others are raised without serious reasons.

(2) It is expected that, as under the present law, registration will be granted to the first applicant. But now the question arises as to what shall be the rights of a prior

user as against an applicant. It is desired that registration shall offer particular advantages in order to induce all traders to get their marks registered. Therefore it has been proposed that a prior user of a mark which has not been registered shall not be opposed to registration for another man who applies for registration, and that on the other hand a person who has previously used the mark shall have the right to continue such use, notwithstanding its registration by the applicant. Both shall be entitled to use that mark, provided always that no one may abuse his right in a dishonest way. In such a case an action of unfair competition should be open to the aggrieved party.

(3) Under the present law registration has always been granted for special goods. A classification is in use in the patent office to facilitate the administrative work. The effects of registration are not determined by or confined to the class of goods indicated in the application. It is obvious that any searches regarding conflict are very difficult without a system of classification.

It has therefore been suggested that a system of classification be introduced to the effect that within the class applied for registration shall cover all goods identical or similar to the goods for which registration has been obtained, and that outside of such class protection shall be given only in case of real unfair competition.

INDUSTRIAL DESIGNS AND MODELS.

Ornamental designs.—Designs protection in Germany is very different from the corresponding protection in the United States.

In the first place no distinction is made between designs and prints and labels. Both belong to one group of creations for which a double protection is provided.

All articles of industrial art, to whatever class they may belong, are protected under the artistic copyright law of January 9, 1907. This protection depends upon no formality whatever. As soon as a work is created it is protected, no registration or deposit being requested.

Works of applied art are entirely assimilated to works of fine art. This is the result of a long experience had in Germany and in other countries, as France, e. g., that the best way to promote the development of art is to prevent piracy. Industrial art (Erzeugnisse des Kunstgewerbes) includes all creations showing any individual effort, whether the subject of such creation be a work of fine art adapted to practical use or an industrial article which has received an artistic configuration, a particular shape, or ornamentation. (Useful articles in metal, furniture, pottery, glass, textiles, as embroidery, laces, stationery, wall paper, etc.)

All articles of industrial art may at the same time find protection under the law concerning copyright in industrial designs or models of January 11, 1876. (Gesetz betreffend das Urheberrecht an gewerblichen Musten und Modellen.)

The law of January 9, 1907, provides for registration for all "new and original designs or models." It is understood that novelty and originality are not to be considered with regard to utility, but only artistic or æsthetic effect. There is no substantial difference between ornamental designs and articles of industrial art, though it may be admitted that it will be easier, in the case of the texture of a necktie, e. g., to find matter for design protection than for artistic copyright protection. It is a matter of artistic culture whether we want all implements of our daily use to be adorned artistically, and whether we respect the work of every artist endeavoring to improve by a personal effort the shape of such implements, or whether we rate any landscape picture of an amateur higher than the famous saltcellar made by Benvenuto Cellini, of Tiffany glass, only because the form of the latter suggests the possibility of practical use. If we respect the work of an artist, we must protect it against piracy. This is the lesson which experience taught us while our industrial art was protected under the design law only. It will be shown later that this protection was by no means sufficient to give industrial art an effective encouragement.

Protection is granted to the author. If a design has been made in the works of a manufacturing firm, the copyright of the servant is presumed to pass to the master.

Any design protection is dependent upon deposit and registration.

No design may be deposited after publication or after copies have been sold.

Deposit is to be effected at the local courts. The patent office has nothing to do with designs protection. It was suggested some years ago that all deposits at the patent office be centralized, but artists and manufacturers found it more convenient to deposit at the court of their residence.

Smaller designs may be deposited together with others in parcels containing not more than 50 designs.

Deposit may be made under seal and be kept secret for a term of three years.

The duration of protection is 15 years in maximo.

Fees amount to:

(*a*) For the first three years, per year, 1 mark for every single design or parcel (of 50 designs).

(*b*) For the period from the fourth to the eleventh year, 2 marks for every design and year.

(*c*) For the period from eleventh to fifteenth year, 3 marks for every design and year.

Protection may be had either for the whole period or for a shorter period, with later renewals.

Deposits, as far as they are not secret, are open to inspection.

Deposits and renewals are published in the Imperial Gazette.

The owner of a registered design has the exclusive right to copy the same and to sell copies. Want of novelty or of originality may be pleaded as a defense.

Remedies are substantially the same as in patent cases.

As I have told before, the present designs law is not considered as satisfactory. It is expected that in a few years after the revision of the patent and trade-mark law the Government will prepare a revision of the present law.

The complaints are:

For many articles the deposit is of no practical use, as it is not possible to deposit a copy in the original form (e. g., of an article of precious material), and representations, in most cases, are not sufficient to establish identity.

It is in many cases impossible to make a deposit before publication, as a manufacturer or an artist—especially an artist who has many articles he wishes to have protected—can not afford to pay fees and to control the renewal dates for articles he has not yet brought on the market.

It has therefore been suggested to follow, in case of a revision of the present law, the new French law of designs of 1909.

In France every article of industrial art, every design, is protected under the copyright law of 1793, as amended in 1902.

Registration is provided for; it can be effected at every time, even after publication.

The object of registration is to secure the proof of priority. Some special remedies are granted only for registered designs. But of course all other proofs of priority are admitted.

Registration is void if it has been proved that another man had created or used the design before registration made for another.

Having studied the organization and working of registration of designs and prints in the patent office in Washington, I venture to make some remarks, which properly do not fall under the paper I have been requested to make. In my mind there is practically no protection of designs in the United States. In 1910 there were deposited about 700 designs and about 800 prints and labels, whereas in Germany there were deposited in the same year more than 100,000 designs (though in many branches deposits are never made), in France about 50,000, and in Switzerland *about* 80,000.

The reason for this remarkable difference of deposits in the United States and other countries is that the assimilation of design protection and patent protection makes it impossible for manufacturers to apply for protection.

A wall-paper manufacturer, e. g., or a lace manufacturer, produces a year some hundreds of new designs of different value and success. Out of the hundred a few will be successful. Can he be expected to pay the enormous amount of £15 for every design patent (whereas in Germany he may get 50 designs registered for three years for 3 marks), if he does not even know whether he will sell copies enough to pay that fee?

What is the practical use of examination? A design patent has been applied for for a wall paper. In the records of the Patent Office there are perhaps a dozen wall-paper patents, whereas hundreds of thousands of wall-paper designs are spread over the whole world, which would have to be searched in order to report on the novelty of such a design.

For years German, French, and Swiss manufacturers have been complaining of the want of any design protection in the United States. I do not know whether this would be sufficient reason for the alteration of the present law. But I am sure that the reasons for these complaints will be appreciated in America to their full value by all who are interested in design protection.

Discussion of the Operation of the German Patent System in Comparison with the Operation of the Systems in England and the United States.

It must be remembered, first, that there does not exist a general absolute measure for estimating the merits or weak points of laws of different countries. As a fact, the whole legislation of one country as well as any single law is, in its dominating features, determined by certain causes, which are rooted in the psychology of the nation, in the standard of its civilization and culture, in its moral and intellectual, social and economical standards. The effects of provisions in a law are coupled with the effects of contingencies, such as historical facts, political situations, influences of single men, etc.

Patent law in England has an old history. It is the product of long experience made in practical life, of certain convictions which are not of a theoretical character, but which have grown slowly in the public mind. Americans have been, with respect to patent law, as in many other things, heirs of British tradition. But they have adapted this succession in an unsophisticated manner to the practical wants of their young and strong industry.

In Germany the situation, when the first patent law was made, was rather a difficult one. Jurisprudence had on the ground of historical and philosophical researches shaped the whole general civil law into a theoretical system in which no place was left for that modern institution of patent law. Therefore this was created as a strange body in the organic system of German civil law. Our patent law has been an experiment, not a bad one, because it had been worked out with great care; but experience has shown some weak points. And to amend this, the Imperial Government is preparing now a new law.

The Government is assisted in this work by corporations representing divers branches of industry, by lawyers and patent agents, and especially by the German association for the protection of industrial property, which, composed of manufacturers, engineers, lawyers, and patent agents, has for the last 20 years collected all experiences and opinions and discussed questions relating to the further development of our national law and international treaties, in committees, and public congresses.

In these debates comparisons have often been made between German patent law and that of other countries. And I may safely say, that in the mind of some of our best equipped experts the American law, with regard to the general operation of patent law, is to be considered as a model to be followed in many respects.

In patent law matters, the opinions and wishes of the expert representatives of industry are considered to have the greatest weight, especially in view of their influ-

ence upon Parliament. This is by all means justified. Yet it must be observed that the wants of industry are exposed to changes, and that their opinions may be influenced by circumstances of a rather accidental character. Therefore, the best policy seems to be to consider most carefully the opinions of industrials, but to examine at the same time on which general legal, social, and economical theories or tendencies such opinions are based.

Concerning patent law—the appreciation of the operation of present law and reform—the most striking feature in the views of representatives of industry in Germany is the constant tendency to safeguard what is called the legal security of commerce. Industry with us wants, in first place, to be sure to know exactly what the rights of a patentee are, how far he is protected, and how far his rights are adequate to restrain the activity of other manufacturers. It is preferred to do or to suffer wrong—wrong from the point of view of an ideal or moral conception of law—rather than to be exposed to the uncertain issue of a lawsuit. The principal tendency is to prevent lawsuits by provisions regulating legal relations in a clearly defined and distinct manner.

In that respect the tendencies of industry are strictly opposed to the tendencies manifested in our recent jurisdiction, which are directed to suppress as far as possible formalism in law and to supply it by equity. This latter tendency seems to have the advantage of being in accordance with the logical and natural development of the law of a great civilized nation, whereas formalism—every preventive regulation must be more or less formalistic—is rather a legal shift.

It is true that the tendencies of industry are strictly contrary to the socialistic tendencies gaining influence in our parliamentary life, so that it can not be said beforehand which tendency will prevail. But I believe that the Government is at present inclined rather to follow the opinion of industry with regard to patent law, which means that the present system will be substantially maintained.

SUBJECT MATTER OF PATENT.

No notable changes have been suggested.

PERSONS ENTITLED TO PATENT.

It has been proposed and argued strongly, especially by the Association of Industrial Employees, that it should be recognized by law that the patent is to be granted to the inventor. As to the question how to examine and to decide in case of conflict between different persons claiming the same invention, the following system has been proposed by the above said association for the protection of industrial property.

The first applicant ought to be presumed to be the inventor. In case there are different independent inventors the first applicant should have the patent. If it can be proven that the applicant is not the inventor, the plaintiff should be entitled to demand that the patent be transferred to him. In case of assignment the inventor should have the right to demand that his name be marked on the patent.

This system would approach the English system. The American system does not seem fit for adoption, as the asserting oath is an expediency not known to German law, and as no serious reason seems to justify the granting of a patent to the first inventor, the mere priority in time representing no special merit.

CONSTITUTIVE EFFECT OF PATENT.

It has been proposed to abolish the provision that a petition for annulment on the ground of no patentability can not be filed after five years from the time of grant. The existence of this clause has created difficulties in these cases where the patent had been granted upon a manifest error of the patent office, there being no new invention at all. The courts have of late shown the tendency, in such cases, to give the patent a very restrictive interpretation with the result that the patent proved prac-

tically worthless. This has raised some agitation among industrials, who complain that the security of patent property is endangered.

It has therefore been argued that if it were possible to plead no patentability as a defense to an action of infringement, the courts would not be obliged to construe patents restrictively. Such a system corresponds to the American or British system.

There is still a strong opposition from the industrial party. Yet it is possible that this proposition may be adopted.

But even in that case, the question of validity of a patent would never be referred to the courts, it being held that the ordinary courts are not competent to decide upon technical matter. It would, therefore, very likely be provided that a person pleading no patentability should bring in a petition for annulment at the patent office.

The value of preliminary examination has been questioned by some authors for the reason that it will never be possible to make the searches complete and to state exactly whether an invention is new or not. It has been said that examination requires an enormous organization, which is not worth the sacrifices of technical labor and money.

This opinion has, however, found no wide approval. It must be acknowledged that examinations of inventions, as made in the German patent office—though it can never pretend to be complete or free from mistakes—has proved a great benefit to the development of technical art and industry. As a technical and scientific institution the patent office can not be abolished.

More serious are the suggestions: To restrict examination, either according to the English system—to examine only national patents of the last 50 years—or according to the American system, as it works practically, in searching out the whole technical literature of all countries, but especially the patents of some countries.

The debate on that question is not yet closed. The opinion prevailing is certainly that examination in its present extent is to be maintained, if it can be organized in a way to satisfy the ever increasing number of applications—45,000 per year.

ORGANIZATION OF PROCEDURE.

The present procedure is too complicated and not altogether satisfactory.

It has been proposed—nearly unanimously—to make the examiner independent and to constitute him as judge of first resort. The retention of the application division and the division of appeals would create three resorts, which would correspond to a general desire to have three resorts for the procedure of granting, as there are four resorts for refusing and annulling.

It is expected that such a system, which would in some ways follow the American and British system, will be adopted.

The present method of drafting claims is much criticized. It is said that the logical definition often has the effect to restrict or to sophisticate the subject of a patent. Preference is given by many experts to the enumerating method of American claims. Opinions are still divided. It will perhaps be possible to combine both systems or to leave the choice to the applicant as to how to formulate his claim.

It is the general belief that our patent fees are much too high, and that this fact has caused so many patents to be dropped after the first years. The adoption of the American system of one moderate fee for the whole term has been suggested. Yet serious objections have been made. It has been said that a system of annual and increasing fees shall have the effect of making every patentee consider whether his patent is still worthy of being maintained. Thus, patents for inventions which are not worked or have no practical value would disappear, an effect which seems to some people as desirable as granting patents to new inventions.

On the other hand it seems necessary to abolish or abate fees in the first years, that is to say, for the period where the patentee has most to struggle with in getting his invention worked.

It is therefore probable that we shall have a system of the following character: First fee somewhat increased; no fees or low fees in the next three or four years; higher and increasing fees for the close of term of protection. The total fee would be considerably lower than the present one.

The extension of the duration of the patent has been suggested for the reason that some inventions can be introduced into trade only very slowly. The debate seems not yet closed. But it was said that if the term should be extended to perhaps 20 years the fee for the last 5 years should be very high.

As to the working clause and the question of compulsory license, it is not to be expected that the provisions of our new law (of 1911) will be altered.

As a last remark, attention may be called to the fact that there is a tendency in Germany to constitute the different divisions of the patent office as special courts in patent matters and to limit the jurisdiction of ordinary courts to infringement cases.

Some years ago there were very interesting debates on the proposition made by the German association to take jurisdiction in all patent cases away from the ordinary courts and to refer them to special patent courts, composed of lawyers and technical experts. The Government is now frankly hostile to this suggestion, which, of course has not been received kindly by the majority of German lawyers, though some of our first patent lawyers were in favor of patent courts. For some time to come there will be no change. But this fact accounts for the tendency of the courts to confirm the findings of the patent office. The provision under which appeals in annulment cases are referred to the supreme court has, as far as I know, never been criticized.

Organization of the Patent Office.

THE PATENT OFFICE AS AN ADMINISTRATIVE AUTHORITY AND AS A COURT.

The patent office is used for the registration of patents, utility models, and trade-marks, and for the keeping of the necessary registers and the conduct of such administrative work as grows out of these duties.

It was created by patent law of May 25, 1877. It is an imperial administrative office and is subject to the immediate direction of the imperial chancellor.

As an administrative organ the patent office is a unifunctional institution. Viewed from the point of view of the subject matter with which it deals, it may be looked upon as possessing three distinct parts or offices—the office for patents, the office for utility models, and the office for trade-marks.

Each of these separate offices is, in its functions and in its jurisdiction, entirely independent of the other. The administration of the patent office is concentrated in a single official—namely, the president.

One of the peculiarities of the patent office consists of the fact that it contains within one and the same office several distinct authorities, which have been referred to as the patent office proper and as the superior patent office (Patentamt und Oberpatentamt).

Viewed from the standpoint of its functions, the patent office is partly a court and partly an administrative authority. As a court, it exercises ex parte jurisdiction, as in case of the granting or denial of patents, the registration of utility models, and the registration or cancellation of trade-marks; and an inter partes jurisdiction, as in case of proceedings for annulment or revocation in connection with patent matters, or of cancellation proceedings in case of trade-marks.

In all parts of the patent office jurists and technicians are engaged on common branches of work, their activities being closely interrelated. The jurisdiction of the patent office may hence be characterized as a mixed special jurisdiction (gemischte Sondergerichtbarkeit).

THE EMPLOYEES OF THE PATENT OFFICE.

At the head of the office is the president, who is appointed by the Emperor on nomination of the upper house of the legislature.

The president is director of the whole patent office as being an administrative body. He personally has not the functions of a judge, as, e. g., the Patent Commissioner of the United States. He is president of one division of appeals and has, in that capacity, the same position as the president of another division.

He has the control over the whole administrative service. His duties include efforts to secure uniformity in the decisions of the several divisions. He can, for that purpose, participate in the discussions at meetings of all divisions and summon members of the divisions to general meetings where particular questions may be discussed. The various divisions, or their members, are not legally bound to follow the directions given at those meetings.

But if some functionary, as, e. g., the president of a section, should constantly, through negligence or intention, ignore these directions and act contrary to the policy of aiming at a uniform jurisdiction he would be considered unfit for his place, and a disciplinary procedure might be opened against him, as against any functionary who does not fulfill his duties.

The president is assisted by examiners (Mitglieder) partly judicially trained and possessing the qualifications for appointment to positions as judges or to the higher administrative service and partly with a technical education, representing, particularly, familiarity with some branch of technical science.

Decisions concerning matters submitted to the patent office may be rendered by the examiners only.

For the assistance of the examiners and for the preparation of the decisions technical assistant examiners are employed.

In addition to the above employees, a large number of bureau chiefs and assistants and clerks, messengers, watchmen, laborers, etc., are employed.

All officials are subject to the disciplinary control of the president.

THE FUNCTIONS AND ORGANIZATION OF THE PATENT OFFICE.

In patent matters.—The patent office receives patent applications, examines the same, issues the patent, registers the patents granted in a register of patents, and publishes them. The patent office also receives the patent fees, records changes in the person of the owner of the patent, cancels patents, and renders decisions in suits of annulment and revocation. (The last authority in such cases is the imperial supreme court.)

These various activities, which fall partly in the domain of administration and partly in that of judicial determination, are conducted through the following organization:

(*a*) The receipt of applications through the examination and the granting of patents is, in the first instance, charged to the "divisions of applications."

Only permanent technical examiners (Mitglieder) are permitted to be active in these divisions. A quorum to render business in such divisions must consist of at least three examiners, two of whom must be technically trained (the third having a judicial training).

The administrative direction of the division is in the hands of a chief examiner of division.

For the conduct of the preliminary examination of the application the chief of division designates one of the examiners of the division, and for the consultations on the case a reporter of the facts discovered by the preliminary examiner.

The preliminary examiner is prohibited from participating in the decisions reached by the division.

Differences of opinion between divisions concerning jurisdiction over a case are decided by the president.

(*b*) The issuance of annulments and of revocations of patents is in charge of a division of annulments.

(*c*) For the decision of appeals from the decisions of the divisions of applications and of the division of annulments two divisions of appeals have been created. One of these divisions of appeals is also a division of appeals in case of trade-mark matters.

All decisions of the division of annulments and of the division of appeals are rendered by two judicially trained and three technically trained examiners. Decisions may be rendered only in case of the presence of at least three members.

The administrative conduct of affairs in the division of annulments and in the divisions of appeals is in the hands of the president. In case of his absence, the imperial chancellor determines who shall represent the president.

The balance of the activities of the patent office in patent matters is conducted in an administrative way. Registration in the register of patents is controlled by the chief of the particular division of applications concerned. If registration is made against the protest of one of the parties to the patent, the division is required to meet and render a decision in the case.

In utility-model matters.—All matters concerning the granting of protection in case of utility models is charged to a particular division of applications of the patent office. The direction of this division is charged to a judically trained examiner appointed by the imperial chancellor. Protests against the findings of the division of application are passed upon by the president of the patent office.

All utility models brought to the attention of this division in the prescribed manner are registered in a register of utility models.

In trade-mark matters.—The patent office receives all applications for trade-marks, examines the same, decides contests, determines the registration of trade-marks in the register of trade-marks, records changes in the person of the owner of the trade-mark, enters cancellations of the same, and renders decisions concerning the cancellation of trade-marks in accordance with the law.

The organization of that part of the patent office having to do with trade-mark matters is as follows:

(*a*) For the handling of all matters relating to trade-marks, including the registration and cancellation, three divisions of trade-marks exist. These are presided over by judicially trained examiners.

Decisions may be rendered by not less than three members. The facts for the examination are prepared by assistants.

(*b*) Appeals from the decisions of the divisions of trade-marks are heard by a division of appeals. This division, as already indicated above, is divisional of the division of appeals in patent matters.

Decisions may be rendered by the division of appeals in trade-mark matters only in case of the presence of at least five examiners, two of whom at least must be judicially trained and the rest technically trained. In case of patent matters, it will be recalled, at least three examiners must be technically trained.

In all of the divisions referred to above application is made of the court procedure in the civil courts.

The patent office is required, on petition of courts concerning questions of patents and registry of trade-marks, to prepare opinions in all cases where the court has received contradictory opinions from several experts concerning the facts. These opinions may concern themselves with technical matters only, the determination of judicial questions being left to the court.

The patent office is not authorized to issue opinions in any other way and for any other purpose without the express consent of the imperial chancellor. The rendering of opinions in the matter of utility models is not provided for in the law governing

this matter. The imperial chancellor has, however, authorized the patent office to prepare such opinions on request of courts concerning questions which involve protection of utility models, such request to be made only in case of a difference of opinion expressed to the court by a number of experts.

The imperial chancellor has also authorized the patent office to prepare opinions for the use of the attorney general under similar circumstances. The authority authorized to prepare opinions in the patent office is, in every case, the division of appeals.

The patent office carries a permanent list of patent attorneys.

Qualifications for Appointment to the Imperial Patent Office.

(In reading the following regulations it is important to bear in mind that the term "high school," as used in discussions on educational questions in Germany, refers to an educational institution in advance of the "university" as known in this country. A "high-school" education in Germany is equivalent to a post-graduate course, ordinarily leading up to a doctor's degree in an American university. It is preceded by a nine-year course in a secondary institution, such as the Gymnasium, or a Oberrealschule, or a Realschule, the latter having a six-year course and being followed by three years of practical apprenticeship, which are taken as equivalent to three years of work in the nine-year schools. Graduation from an American university entitles to entrance to a German university or technical high school.—Note.)

QUALIFICATIONS FOR APPOINTMENT OF EXAMINERS AND CHIEF EXAMINERS WITH JUDICIAL TRAINING (RECHTSKUNDIGE MITGLIEDER).

In general qualifications for appointment to positions as judges are required, as well as a more or less extensive judicial practice and familiarity with the English and French languages.

QUALIFICATIONS FOR APPOINTMENT OF EXAMINERS AND CHIEF EXAMINERS WITH A TECHNICAL TRAINING.

The following regulations govern the acceptance of applicants for positions as technical "members" (chief examiners and examiners), occupying positions in the main office of the imperial patent office:

The applicant must possess the graduating diploma of a nine-year secondary educational institution, and must have concluded the regular course of a high school by passing the prescribed closing examinations.

As far as it is possible the applicant must give proof of the possession of scientific qualifications for the higher administrative service through the concluding of the prescribed examinations, such as those required for Government building masters, mining engineers, etc.

Exceptions are permitted when through the completion of the examination as doctor of engineering or through particularly long and varied practical experience, a substitute for the missing examinations as Government building master, etc., has been provided. In such branches in which the completion of a particular examination for the higher administrative service is not prescribed—e. g., in case of chemists, physicists, textile engineers, etc.—the examinations for doctor's degree and, in any event, also diploma examinations (diplom-examina) are deemed adequate.

On conclusion of the scientific and practical preparatory service, practical experience covering a period of years is required. Particular value is placed upon occupation in technical industries.

The applicant must, furthermore, possess knowledge of the English and French languages, and must be at least 33 years old.

Before an appointment is made every applicant must present a certificate of health issued by the local Government physician, at the expense of the applicant, or in

case of his residence in Berlin, a certificate of the confidential physician of the Government. This certificate is permanently filed in the archives of the patent office. In addition to this, a declaration concerning freedom from debt or concerning the character of debt obligations of the applicant is required.

The appointment is originally made in the nature of a technical assistant examiner. In case of applicants who occupy positions in the principalities (that is, the various State governments of the Imperial Federation), or who are in the municipal government, request for the granting of the necessary leave of absence for the period of temporary appointment are made by the patent office. All other applicants are appointed at the beginning of any quarter of the calendar year under condition of six weeks notification for discharge.

Traveling and moving expenses for applicants living outside of Berlin can not be reimbursed under existing regulations. The actual expenses of the journey on taking the position, and those which accrue in connection with the moving, are, however, regularly paid after the regular appointment of the applicant, and on special request.

The salary during the trial period as technical assistant examiner is individually determined for every case. When applicants already occupy regular Government positions their former salary, together with an additional payment, is allowed.

The regular appointment as "Imperial Government councilor and member of the imperial patent office" follows in the order of the list of applicants waiting and of the positions becoming vacant or being created, only those who have satisfactorily completed their trial service being qualified for appointment. In this position a salary of 4,500 marks per year and an additional payment of 1,300 marks for quarters is allowed. The salary increases by 600 marks every three years during a period of 15 years, making five increases until the maximum of 7,500 marks has been reached. In addition to this, one-third of the total number of members of the grade of Imperial Government councilor, who enjoy seniority in service, receive an additional allowance of 600 marks per year (which is considered in the determination of a pension on retirement). Promotion to higher salaried places is not excluded.

Experts of widely different character are considered for appointment in the various technical branches, as e. g., mechanical engineers, civil engineers, electro-technical engineers, mining and smelting engineers, shipbuilding engineers, textile experts, chemists, physicists, etc.

The application must be accompanied by a detailed presentation of the life and education of the applicant which must include in particular the following:

(*a*) Personal facts: Date and place of birth, names of parents, vocation of father, religion, citizenship, and whether married or not.

(*b*) Statements concerning scientific education particularly with reference to—

(1) Attendance at a higher secondary school with a nine-year course or some educational institution of equal rank, with the name of the same, and whether the regular graduating diploma of this school was obtained.

(2) Concerning high school courses with a statement of the semesters and the nature of the courses taken, as e. g., mechanical engineering, as well as of the pursuance of special branches lying outside of the scope of the technical studies, as e. g., political economy, law, etc.

(3) Concerning the completion of academic and technical examination, with a statement of the degree received and the examinations along a certain line which were repeated, as well as any distinctions obtained in a course of high school studies, such medals, traveling prizes, etc.

(*c*) Statements concerning the practical experience of the applicant, including—

(1) Apprenticeship experiences at the time between the completion of the secondary school and entrance into the high school.

(2) Experience obtained during vacations in the course of the regular high-school studies.

(3) Practical experience after completion of high school, as e. g,. practical preparation for the administrative service and other activity in the imperial, state, or municipal service, or in private practice, or as a teacher.

The statements must contain detailed information concerning the time, place, and manner of occupation. Information is desired particularly with reference to whether the practical experience of the applicant took place in a factory, in a workshop, in a construction bureau, or in a laboratory, and in which particular branch of industry. Should the applicant already have had practical experience in patent matters or along literary lines, this likewise should be set forth.

(*d*) A declaration concerning familiarity with foreign languages, particularly with reference to the English and French languages.

(*e*) Statements concerning the present condition of military service, with reference to service already performed or the time at which active military service must be performed.

(*f*) Statements concerning the divisions of the patent office and the subdivisions concerning which the applicant, as a result of his scientific education and his practical experience, possesses special qualifications. In indicating such class of work reference should be had to the classifications of the work of the patent office as set forth in the official classification list. Such reference should be made by indicating the number of the class, as e. g., class 47c.

(*g*) Statements concerning the possession by the applicants of patents for inventions or of applications for patents which are pending.

(*h*) Statements concerning the present position of the applicant with reference to the time when, in accordance with existing regulations concerning notification prior to resignation, such resignation can take effect.

(*i*) Any references which the applicant may choose to present.

The statements required under (*b*) and (*c*) above must be supported by copies of the certificates and diplomas to cover every school attended, special courses followed, examinations completed, and practical experience enjoyed. In case of the acquirement of the doctor's degree, a copy of the dissertation must accompany the application.

Reimbursement for traveling expenses incurred in coming to Berlin for personal presentation is not permitted.

QUALIFICATIONS FOR POSITIONS AS PERMANENT ASSISTANT EXAMINERS.

The following regulations govern the appointment of applicants for positions as "permanent assistant examiners in the imperial patent office" (Ständiger Mitarbeiter des Kaiserlichen Patentamts):

In making appointments to these positions consideration is given largely to young technical experts (Techniker) between the ages of 26 and 30. Usually such applicants are required to present diplomas showing graduation from a secondary educational institution offering a nine-year course and also from a high school. In addition to this, knowledge of the English and French languages is required and a short period of practical experience preferred. Disposition is made in such positions particularly of engineers who have obtained their diplomas in the high schools, Government directors of construction works, mining experts, and doctors of philosophy, the latter as physicists and chemists.

The appointment is originally made for a six-month period of probation. If the applicant proves satisfactory, he is appointed as a technical assistant examiner in the temporary organization. From the day of his appointment the applicant is paid an annual salary of 2,400 marks which is, from time to time, increased up to 3,200 marks. Promotion to the official position of permanent assistant examiner follows according to the time of service and the occurrence of vacancies, or the creation of new positions.

Regular appointment is made for life. The original salary in such a case is 2,700 marks per annum. The maximum salary is 6,600 marks and is reached in 21 years of

service, through advances of 500 marks per annum every three years for three successive periods, and of 600 marks every three years for four successive periods. In addition to this salary an annual allowance of 1,300 marks is made for rent. In case of particularly excellent service, promotion to the position of "member of the imperial patent office," i. e., examiner or chief examiner, is possible.

QUALIFICATIONS FOR POSITIONS NOT REQUIRING TECHNICAL PREPARATION (BUREAU CHIEFS, SECRETARIES, CALCULATORS, ETC.).

Applicants without technical preparation who desire to apply for positions as clerks (expedierende Sekretäre und Kalkulatoren) in the patent office must have had at least seven years of study in a secondary educational institution offering a nine-year course, and must have proven their qualifications through the passing of an examination for a position in the Government service as a clerk (Bureaubeamte), class 1.

Applications must be accompanied by the following documents:

(*a*) A detailed presentation of the life of the applicant drawn up by himself.

(*b*) The school certificate on leaving the last educational institution attended.

(*c*) The certificate concerning the examination as a Government clerk, class 1.

(*d*) The various documents concerning the performance of military service, including the certificate of conduct, the certificate of discharge, and the certificate of completion of military service in the reserves.

(*e*) Certificate of conduct (official certificate issued to employees of the Government) and occupation from time of leaving school.

(*f*) Declaration concerning freedom from debt obligations.

The various certificates referred to in the above must be in the form of officially certified copies.

For the appointment of aspirants [1] to head clerical positions (Bureaudienst-Anwärte), the following requirements govern:

The applicant must generally have attained the age of 25 at the time of appointment. He is appointed as a helper during a probation period of several months. During this period he receives 4.20 to 4.80 marks per day, this amount being paid at the end of the month, and in case of regular employment includes payment for Sundays and holidays also.

On satisfactory completion of the period of probation, temporary appointment follows. A monthly salary, payable in advance and equal to 1,800 marks per year, is then paid. From time to time this amount is increased to 2,500 marks per year. The time at which an appointment to the permanent organization can be made in case of clerks and laborers can not be determined in advance. The original salary in case of the secretaries and calculators is 2,100 marks per year with an additional allowance of 800 marks for rent. The maximum salary is 5,000 marks per annum. This salary is attained within 18 years through an increase of 500 marks at the close of each 3-year period for five separate periods, and an increase of 400 marks at the close of the sixth period of 3 years.

QUALIFICATIONS FOR POSITIONS REQUIRING TECHNICAL EXPERIENCE (BUREAU CHIEFS, SECRETARIES, CALCULATORS).

Applicants for positions requiring technical experience, including positions as bureau clerks (expedierende Sekretäre und Kalkulatoren), must possess at least the educational requirements entitling the holder to the privilege of one year of voluntary military service,[2] and in addition to this must possess sufficient knowledge of the English and French languages to read documents of a technical character written in these languages, and, if possible, also facility in the use of some standard method of stenography.

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[1] By "aspirants" are understood applicants who seek employment to lower positions and hope for promotion to positions to which they "aspire."

[2] The educational qualifications which entitle to the privilege of one year's voluntary military service are *the completion of six years of* work in a secondary educational institution.

In addition to this, applicants must give proof of their technical preparation, preferably through the submission of graduating certificates from secondary schools of mechanics, building schools, or some educational institution of equal rank, or through the presentation of evidence of an extended practical experience (about two years) in technical industries on completion of a technical course in an educational institution.

The application must be accompanied by the following documents:

(*a*) A detailed presentation of the life of the applicant prepared by himself.

(*b*) The final certificate from the school last attended.

(*c*) The graduating diploma of the trade school attended.

(*d*) The various certificates of military service, including certificate of conduct, certificate of discharge, and certificate of completion of military service in the reserves.

(*e*) Testimonials concerning conduct (official certificates issued by offices in which employed) and occupation since completion of school work.

(*f*) Declaration concerning freedom from debt obligations.

The certificates included under the headings *b* to *e* above must be presented in the form of official certified copies.

For the appointment of aspirants (Anwärter) to the above positions the regulations set forth in connection with qualifications for appointment to clerical positions not requiring technical preparation apply.

THE APPOINTMENT OF SUBORDINATE OFFICIALS IN THE MILITARY SERVICE TO CLERICAL POSITIONS.

Subordinate officials engaged in the military service (Militäranwärter) who apply for positions as bureau clerks (expedierende Sekretäre und Kalkulatoren) are required to have completed at least four years of work in a secondary educational institution offering a nine-year course, and must, in addition to this, present proof of their qualifications in the form of the military certificate of examination for some branch of the military service, such as chief gunner, paymaster, artillery officer, etc.

The application must be accompanied by the following papers:

(*a*) A detailed statement of the life of the applicant prepared by himself.

(*b*) The final certificate on leaving the last educational institution attended.

(*c*) A certificate showing the completion of the examination for a particular branch of the military service.

(*d*) Certificate of right to service in the Government through military service (Zivilversorgungsschein).

(*e*) Testimonials concerning conduct and character of service while in the military service.

(*f*) Declaration concerning freedom from debt.

QUALIFICATIONS FOR APPOINTMENT OF CLERKS FROM THE RANKS OF "ANWÄRTER."

Preliminary requirements.—Aspirants (Anwärter) to positions in the clerical service of the imperial patent office are required to possess the following qualifications:

(*a*) They must, in the opinion of the confidential physician of the Government, be physically competent to perform the service to which they are to be appointed.

(*b*) They must have given proof of their practical qualifications, including facility in typewriting and in the use of one of the standard stenographic systems, e. g., Gavelsberger, Schrey, Stolze.

(*c*) They must find themselves in well-regulated economic circumstances and be free from debt.

(*d*) They must have hitherto conducted themselves blamelessly.

The certificate concerning physical condition must be provided by the applicant at his own cost and is permanently filed in the archives of the patent office. This certificate must be issued by the confidential physician of the imperial patent office resident in Berlin. The medical examination, if the clerk does not have any wishes to the contrary, takes place shortly before he enters upon his period of probation.

Evidence that the applicant finds himself in well-regulated economic circumstances is to be presented in the form of a written declaration.

In case the clerk was at any time without employment, either in the military or civil service, he is required to present a certificate from the police concerning his conduct during such period.

Appointment and occupation.—The appointment to the clerical service follows in the capacity of a clerical assistant and for a probation period of six months. The termination of the official relations of the appointee follow automatically at the end of this six-month period in case the applicant does not prove himself qualified for the service. The patent office reserves to itself the right to sever the official relations, even during the six-month period of probation, as well as at any time prior to the actual appointment of the clerk to a permanent position on the regular force with the limitation that notice of one month must be given, except in case of discharge for disciplinary reasons, in which case peremptory action is possible. In case the applicant desires to sever his relations with the patent office prior to his regular appointment, he is required to give notice one month in advance.

The traveling expenses in connection with the medical examination and the expenses of moving and traveling in connection with the entry upon duty must be met by the clerk himself. Reimbursement or assistance of any kind for this purpose is not permissible.

The clerk must subordinate himself to the regulations prescribed for the conduct of officials of the Imperial Government and particularly for the officials of the patent office.

During the period of probation, the assisting clerk receives a daily salary of 3.70 to 4.30 marks, which is paid at the end of every month, and in case of regular occupation, includes all Sundays and holidays. Payment for the latter is invariably at once suspended when the clerical assistant fails to report for duty at any time.

The transfer of the clerical assistant to the permanent organization can not follow until the fact of his qualification for the service has been established in every way.

With the appointment of the clerk to the regular service he begins to draw a salary of 1,600 marks per year payable monthly, which is increased from time to time up to a maximum of 2,200 marks.

Regular appointment.—The necessary requisite for the promotion of a clerk to permanent appointment in the patent office is the continuance of the necessity for the performance of the work done by the clerk, as well as continued evidence of his usefulness, his physical adaptability, and his blameless conduct.

The time of appointment to the regular force can not be determined in advance. It will depend, in a general way, on the limits set by the budget and more particularly upon an increase in the number of positions or the occurrence of vacancies.

The original salary of a clerk of the patent office is 1,800 marks per year, supplemented by an allowance of 800 marks for rent. The maximum salary is 3,200 marks and can be obtained at the end of 21 years through increases of 200 marks at the end of a 3-year period for 7 successive periods.

As evidence that the above regulations, which are supplied to the applicant, have been taken note of, the patent office requires the applicant to sign his name, and to affix the date, to the following form found on the last sheet on which the above regulations are set forth:

"I have taken note of the regulations presented above. At the same time I render assurance that I find myself in well-regulated economic circumstances and that I am free from debt. I am aware of the fact that my dismissal will follow if at any time in the future this assurance is discovered to be wholly or partly false."

QUALIFICATIONS GOVERNING APPOINTMENTS TO SUBORDINATE POSITIONS.

Preliminary requirements.—The clerks who are appointed as aspirants (Anwärter) to the subordinate positions (Unterbeamtendienst), such as messengers, watchmen, and laborers, in the imperial patent office are required to possess the following qualifications:

(a) They must be physically fit for the service.

(*b*) They must find themselves in well-regulated economic circumstances and be free from debt.

(*c*) They must have theretofore conducted themselves blamelessly.

Proof of physical condition must be provided by the applicant at his own cost through a doctor's certificate, which is permanently filed in the archives of the patent office. A special form of certificate is provided for this purpose. Evidence concerning the fact that the applicant finds himself in well-ordered economic conditions, and is free from debt, must be presented in the form of a written declaration.

Appointment and occupation.—Regulations governing the appointment and occupation of clerks of the class described above are the same as those elsewhere set forth, with the following exceptions:

The period of probation is three instead of six months. The salary during the period of probation is from 3 to 3.40 marks per day, and the salary after temporary appointment is 1,250 marks, and may be raised to 1,350 marks per year.

Budgetary appointment.—The regulations governing budgetary appointment, i. e., appointment to the permanent organization, are the same as are those elsewhere set forth under this heading, with the following exceptions:

The salary originally is 1,200 marks per year and the allowance for rent 480 marks per year. The maximum salary is 1,700 marks, and can be attained at the end of 21 years through an increase of 70 marks after a period of 3 years for six successive periods, and an increase of 80 marks at the close of the seventh period.

Salaries of Employees.

Officials provided for in the budget.

Title of office.	Salary.		Additional longevity pay at the end of—							Additional pay for quarters.
	Initial.	Maximum.	3 years.	6 years.	9 years.	12 years.	15 years.	18 years.	21 years.	
	Marks.	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*
1. President	14,000	17,000	1,500	1,500	.....	.....	.....	.....	.....	1,680
2. Directors	8,000	11,000	1,000	1,000	1,000	.....	.....	.....	.....	1,680
3. Examiners (Mitglieder):										
a. In suboffice	2,000	4,000	.....	.....	.....	.....	.....	.....	.....	.....
b. In main office, chief examiners and examiners of the division of appeals.	7,000	9,200	800	700	700	.....	.....	.....	.....	1,300
c. In main office, examiners	4,500	7,500	600	600	600	600	600	.....	.....	1,300
4. Assistant examiners	2,700	6,600	600	600	600	600	500	500	500	1,300
5. Chiefs of bureaus (clerical).	2,100	5,000	500	500	500	500	500	400	.....	1,300
6. Bureau employees, including chief of "Kanzlei,". clerical	2,100	5,000	500	500	500	500	500	400	.....	800
7. Clerical (Kanzlei) employees	1,800	3,200	200	200	200	200	200	200	200	800
8. Messengers, watchmen, etc. (Unterbeamte)	1,200	1,700	80	70	70	70	70	70	70	480

Remarks.

3*a*. Additional pay is allowed according to means available.

3*c*. Up to one-third of the officials holding positions provided for in the budget for the branch of the imperial office of the interior receive 600 marks additional pay each.

5. Also, pensionable additional pay of 1,200 marks.

6. Also, nonpensionable additional pay for one employee as accountant, 600 marks, and for five employees as seniors in the service, 300 marks each.

8. In addition, the chief messenger and one "Kanzlei" servant (watchman) receive additional pay of 150 marks each.

Officials not provided for in the budget.

Title of office.	Minimum pay for attendance.	Maximum pay for attendance.	Longevity pay at the end of—				
			1 year.	2 years.	3 years.	4 years.	5 years.
1. Legal assistant advisers or referees (court assessors)	*Marks.* 2,400	*Marks.* 3,900	*Marks.* 300	*Marks.* 300	*Marks.* 300	*Marks.* 300	*Marks.* 300
2. Technical assistant advisers or referees	(1)	(1)	(1)	(1)	(1)	(1)	(1)
3 Technical assistant employees	2,400	3,200	200	200	200	200	
4. Occasional bureau employees (or supernumeraries):							
a. Civilian students	1,800	2,500	200	200	150	150	.....
b. Military students	2,000	2,500	200	150	150	.....	.....
5. Occasional clerical (Kanzlei) employees (or supernumeraries)	1,600	2,200	200	200	100	100	.....
6. Assistant "Kanzlei" servants	1,250	1,350	50	50	.....	.....	.....

[1] According to agreement.

Remarks.

Longevity pay is always to be allowed from the beginning of the month on the first day of which the official has been in the respective rating a full year, or other period provided for.

1. Counted from the time the grade of "assessor" (or assistant judge) is reached.
3. Counted from the date of entering the office.
4, 5, and 6. Counted from the date of acceptance as supernumerary (or student).

Assistant employees.

Title of office.	Maximum per diem rates.
	Marks.
1. Assistant technical employees	6.50
2. Assistant bureau employees	4.80
3. Assistant clerical (Kanzlei) employees	4.30
4. Assistant "Kanzlei" servants	3.40

Remarks.

The per diem rates depend on means available.

1. To be allowed only for temporary service.
3. To be allowed for temporary or probationary service.

In general the salary is adequate to prevent employees from seeking engagement with private firms. Occasionally young bureau officials of the grade of assistant bureau chiefs or bureau chiefs who possess technical education leave because of dissatisfaction with salaries.

It must be remembered that the German middle classes are inclined to enter the public service because it gives them a certain social position, a title, and expectations of pension in case of retirement. Men of unusual mental capacity and energy, especially technical men, will probably not confine their ambition to a career in the civil service where prospects for the future are limited.

But we can say that we have in the examining force many employees of excellent qualities.

It must further be observed that on an average the value of one mark is that of half a dollar in Washington. This is at least what I have been told in Washington

by a friend who himself is a leading official in the civil service and who knows German life fairly well.

The raising of salaries of technical employees has often been considered, as they can not expect to enter into other branches of administration, where as a rule only jurists are appointed. But it has always been thought inexpedient to give the employees in the patent office higher salaries than are offered to employees in other branches.

Regulations Concerning the Retirement and Pensioning of Employees.

All officials provided for in the budget are entitled to pensions after 10 years of service in case of physical disability. (Paragraph 34, Imperial Law of Officers.)

Before the expiration of 10 years a pension may be granted under unusual circumstances. (Paragraph 39, Imperial Law of Officers.)

An employee is, however, entitled to a pension before the expiration of the 10-year period in case of disability because of accident. (Paragraph 36, Imperial Law of Officers.)

In case of officials who are at least 65 years old, disability is not requisite to being entitled to the pension. (Paragraph 34a, Imperial Law of Officers.) The amount of the pension is adjusted to the period of service and to the amount of the salary last received. The period of service is figured, at the earliest, from the seventeenth year of the life of the employee. (Paragraph 48, Imperial Law of Officers.) In determining the amount of the pension the actual salary and a certain part of the allowance for quarters are considered. (Paragraph 42, Imperial Law of Officers.) At the close of the 10-year period of service the pension is twenty-sixtieths of the final salary. With every succeeding year the pension increases by the amount of one-sixtieth of the income up to the thirtieth year of service. From there on it increases by one one-hundred-and-twentieth of the salary.

The pension may, however, not exceed forty-five-sixtieths of the final salary. (Paragraph 41, Imperial Law of Officers.)

The right to the maximum pension is generally attained at the age of 60 years.

Below are presented details concerning the minimum and maximum pensions due to the different classes of employees engaged in the imperial patent office:

Title of employee.	Minimum pension.	Maximum pension.
	Marks.	*Marks.*
President	5,046	13,602
Directors	3,045	9,102
Chiefs of divisions and members of the division of appeals[1]	2,625	7,557
Other examiners	1,794	6,732
Permanent assistant examiners	1,194	5,607
Chiefs of bureaus	1,393	5,307
Assistants to chiefs of bureaus	882	4,161
Clerks	782	2,811
Messengers, watchmen, laborers, etc	500	1,500

[1] These chiefs of divisions are chief examiners and the "members" are examiners. They are referred to as "Vorsitzende der Abteilungen" and "Mitglieder der Beschwerde-Abteilungen."

In case of the decease of an employee, his widow receives a pension, called widow's pension (Witwengeld), equal to forty one-hundredths of the pension to which the employee was at the time entitled. (Paragraph 2, Imperial Law of Officers.) For every child whose mother lives, the pension is equal to one-fifth of the widow's pension, and for every child whose mother is dead, the pension is equal to one-third of the

widow's pension, such pension for children being designated as orphan's pension (Waisengeld). (Paragraph 3, Imperial Law of Officers.) The payment of the orphan's pension stops on attainment of the eighteenth year. (Paragraph 14, Imperial Law of Officers.)

Appointment of Officials.

The president is appointed by the Emperor on nomination by the upper house of the imperial legislature. All examiners are likewise appointed by the Emperor. All other employees are appointed by the imperial chancellor or by his representative in the name of the Imperial Government.

The following employees are appointed for life: The president, the directors, the examiners (Mitglieder) (with the exception of the temporary appointees), the permanent assistant examiners (Mitarbeiter), the bureau chiefs, assistant chiefs, and clerks for whom budgetary provision is made.

All of the examiners with a judicial training are appointed for life, as are also all examiners with a technical training, save the temporary examiners (Mitglieder) who are appointed for a period of five years. All other employees of the patent office are subject to removal on notification.

Regulations Governing Patent Attorneys.

STATUTORY REGULATIONS CONCERNING PATENT ATTORNEYS.

Appearance before the patent office, and consultation in matters relating to legal protection in patent matters, is confined to the class of patent attorneys (Patentanwälte).

As early as the patent law of 1877 the necessity of having technically trained persons, professionally active as attorneys in patent matters in case of conferences and for the representation of individuals in patent and trade-mark matters, became apparent. These attorneys who made a profession of supplying the necessary legal information and of representing individuals before the Government authorities at that time were subject to the ordinary trade regulations (Gewerbeordnung) only.

The great increase in work concerned with patent and trade-mark matters necessarily increased the demands made upon the legal representatives before that patent office. At the same time the great danger became apparent of having inadequately trained and unreliable persons provide information for inexperienced applicants. In recognition of this situation, representatives of the profession themselves, in the interest of an elevation of their work, demanded special regulation by law of the professional activities of the patent attorney.

As a result of this agitation the law concerning patent attorneys of May 21, 1900, was enacted.

Through the medium of this law the profession of patent attorneys was definitely established and regulated in much the same manner as is that of the general practitioner.

Admission to the profession of patent attorney is dependent upon the fulfillment of special requirements. To preserve the standing of the profession, the applicant is required to present proof of honorable conduct, both in his profession and outside. Decisions concerning such conduct are intrusted to a special court of honor.

Persons excluded from the profession thereby lose the right to appear as patent attorneys or to designate themselves as such. Violation of this law is punishable by a fine not exceeding 300 marks or by imprisonment. No power to prohibit registered patent attorneys from appearing before the patent office exists.

ADMISSION TO THE PROFESSION OF PATENT ATTORNEYS.

Admission to the profession as patent attorney is postulated upon certain requirements of a personal character and on the submission of proof concerning specialized training.

The special requirements are—

(*a*) Residence in the Empire.

(*b*) Completion of the twenty-fifth year

(*c*) That the applicant is not restricted by judicial decree in control over his own property.

(*d*) That he has not conducted himself dishonorably. The term "dishonorable conduct" does not include any views or practices of a political, scientific, or religious character. In case of denial of the application on the ground of dishonorable conduct, the privilege of an appeal to the court of honor is open within 30 days after receipt of notice of the decision.

The requirements concerning special training fall partly in the realm of technical science and partly in that of law. All applicants are considered technically qualified who have—

(*a*) Devoted themselves to studies in physics and technical branches at a university, a technical high school, or mining academy.

(*b*) In addition to this, passed a State or academic examination in some technical field.

(*c*) Had at least one year of practical experience.

The possession of adequate legal knowledge must be proven by the passing of an examination. Such an examination must have been followed by at least two years of practical experience in the office of a patent attorney or in the patent office or in the patent bureau of a larger industrial concern. This practical preliminary experience serves both for the enlargement of the technical knowledge of the applicant and for the acquisition of the necessary legal qualifications.

The application for admission to the profession of patent attorney must be accompanied by an autobiography of the applicant written in his own hand.

At the time the application is made, proof of the technical qualifications and of the completion of the period of practical work must be submitted. If no doubt exists concerning the personal qualifications of the applicant the application is submitted for an examination. The commission of examination consists of three members, two of whom must belong to the patent office and one to the profession of patent attorneys.

If the applicant has passed the examination, he is bound to the observances of the duties of his profession by presenting himself to the president of the patent office, and then by clasp of hand promising such observance, after which his name is entered in the list of patent attorneys. These registrations are published in the Imperial Gazette, as well as in the gazettes for patent, utility-model, and trade-mark matters. Through a special provision in the law, persons who at the time the law went into effect had been independently practicing as patent attorneys since the 1st of May, 1899, might continue their profession up to April 1, 1901, provided that their professional conduct, as well as that outside of their profession, did not give rise to serious criticism

THE DUTIES OF THE PATENT ATTORNEY.

The law imposes upon the patent attorney the duty "to conscientiously exercise his profession and to so conduct himself professionally, as well as in private life, as to make himself worthy of the respect which his calling deserves."

THE CANCELLATION OF MEMBERSHIP AND THE COURT OF HONOR.

Cancellation of the registration in the list of patent attorneys occurs on the order of the president of the patent office—

(*a*) When the attorney himself requests it;

(*b*) On his death;

(*c*) If he loses his residence in the Empire;

(*d*) If control over his property is legally restricted by court.

When after resignation it is discovered that the patent attorney was guilty of dishonorable conduct prior to his registration, such registration may be canceled.

If the patent attorney violates the duties of his profession he may, in mild cases, be punished in a disciplinary way by reprimand or by fine up to 3,000 marks. In serious cases the cancellation of his name from the list of patent attorneys follows. The decision in cases mentioned under *b* and *c* above is rendered by procedure in the court of honor, such procedure being instituted on direction of the imperial chancellor.

Jurisdiction in disciplinary matters is reposed, in the first instance, in the court of honor (Ehrengericht), and, in the second instance, in the superior court of honor (Ehrengerichtshof).

The court of honor is composed of two members (examiners) of the patent office and three patent attorneys.

The superior court of honor is composed of three members (examiners) of the patent office and of four patent attorneys.

The representatives of the profession who compose the court of honor and the superior court of honor are determined by lot from a list of 20 patent attorneys. This list is prepared anew for every year by designation of the imperial chancellor.

PRACTICE BEFORE THE PATENT OFFICE.

The privilege of practicing before the patent office can not be denied to a registered patent attorney.

Persons who are not patent attorneys may, for the assistance of a patent attorney, be designated by him as his permanent representative before the patent office.

Such permanent representatives may on request of the patent attorney be entered in a particular column of the patent attorney lists.

For the registration of the permanent representatives the regulations applicable in case of patent attorneys apply with the following exceptions:

(*a*) That the twenty-first year has been attained.

(*b*) That the representative is not required to have passed a State or academic examination in some technical field or to have had one year of practical experience in the field of patent and other protective legislation.

The same regulations concerning the transition from the old régime to the conditions imposed by the new patent law, which apply in case of patent attorneys, apply also to their permanent representatives.

General practitioners may not be excluded from appearing in cases before the patent office.

Every party interested, whether applicant or party in protest, may present his own case before the patent office. Denial to do so is contrary to law.

Persons other than patent attorneys, their representatives, or general practitioners are authorized to present cases before the patent office. If, however, they make a profession of such representation, the president of the patent office may exclude them from practice.

There are no legal provisions to determine the extent to which the patent office may recognize an attorney to act for his principal, at least when the latter resides in Germany.

As a rule, the "Patentanwalt" represents his principal before the patent office in every respect; he signs applications, amendments, appeals, motions; he deals with the examiner, pleads before the division in the presence or absence of his principal; he control renewals, pays fees, etc.

If a patent attorney has been constituted representative of an applicant residing abroad, he is treated as though he himself were the claimant or owner. His power of attorney can not be restricted.

Publications.

All registrations made in the register of patents, in the registry of utility models, and in the registry of trade-marks, must be published by the patent office in the Imperial Gazette and in some other organ of the Government.

For this latter purpose the patent office publishes:

1. The Patent Gazette for all publications in patent and utility-model matters as prescribed by law.
2. The Trade-Mark Gazette for all prescribed publications concerning trade-marks.

In addition to this there appear:

3. The Gazette for Patent Utility-Model and Trade-Mark Matters, in which are published all laws, administrative regulations, and official decisions in patent utility-model and trade-mark matters, and in addition to this, communications concerning legislation, judicial decisions, statistics, and literature of the home and of foreign countries concerning these subjects.
4. The patent office also issues the patent document itself.
5. Finally, it issues the abstracts from patent descriptions which represent brief summaries of patents issued together with drawings.

Fees Paid and Procedure in the Cashier's Division.

The cashier's division of the imperial patent office collects all fees and other moneys deposited in connection with the work of the office. One accountant and nine bookkeepers are employed in the cashier's office. The accountant (Rendant) receives all moneys paid in and makes all payments. In addition to this, he keeps the ledger. The bookkeepers keep the subsidiary ledgers as checks (Gegenbücher) covering the following subjects:

1. Receipts and disbursements of patent office fees.
2. Receipts and disbursements of utility-model fees and trade-mark fees.
3. Receipts and disbursements of recording fees and examination fees of patent attorneys.
4. Budgetary receipts and disbursements (following the scheme of the budget).
5. Receipts and disbursements in connection with sale of patent papers, postage, deposits, and advances.
6. Record of receipts transferred to and of moneys received from the imperial treasury.

The procedure in connection with the receipt of fees is as follows:

The payer appears at the proper bookkeeper's desk and gives notification of the amount and character of the fee he desires to pay (application fee, annual fee, appellate fee, etc.). The bookkeeper enters the name of the payer, and if he is not acting for himself but for a third party, he enters the name of the third party, the purpose of the payment, and the amount in the subsidiary ledger and issued a receipt.

The receipt, after being signed, is passed on to the accountant, the payer being requested to advance to the window of the accountant where he makes payment of the amount indicated in the receipt. The accountant enters the amount shown on the receipt in the ledger, countersigns the receipt, stamps it, and after receiving the fee, hands it to the payer. Every fee received must be noted by the cashier's office on the proper document to which it relates. For this purpose all papers received in the

patent and other divisions of application, in the divisions of appeals, of annulments, and of revocation, etc., involving the payment of fees, are several times on every day transmitted to the cashier's office. The cashier's office notes on these papers the amount of the fee, together with the number of the account, in the subsidiary ledger and the date of payment, and then forwards the papers to the authorities concerned with them. In case of annual fees, additional fees, extension fees, renewal fees, and penalty fees, the payer makes out special receipts (Einnahmebescheinigungen). The cashier's office notes on the same the amount paid and the number of the account of the subsidiary ledger. These notations of the cashier's office on the various documents, referred to above, pass through the hands of the proper comptrollers (patent fee comptroller, utility-model fee comptrollers, and the office of renewals). From here the documents pass on to the proper archives.

The following fees are paid:

IN CONNECTION WITH PATENT MATTERS.

	Marks.
1. Application fee (Anmeldegebühr)	20
2. Appellate fee (Beschwerdegebühr)	20

3. Annual fees (Jahresgebühren) which vary with successive years as follows:

Year of patent.	Amount of annual fee (marks).	Year of patent.	Amount of annual fee (marks).
First	30	Ninth	400
Second	50	Tenth	450
Third	100	Eleventh	500
Fourth	150	Twelfth	550
Fifth	200	Thirteenth	600
Sixth	250	Fourteenth	650
Seventh	300	Fifteenth	700
Eighth	350		

The above schedule of fees makes the total payment for a patent 5,280 marks.

	Marks.
4. Additional fee (Zuschlagsgebühr)	10
5. Annulment fee (Nichtigkeitsantrag) and revocation fee (Zurücknahmeantrag)	50

UTILITY-MODEL MATTERS.

	Marks.
1. Application fee (Anmeldegebühr)	15
2. Extension fee (Verlängerungsgebühr)	60

TRADE-MARK MATTERS.

	Marks.
1. Application fee (Anmeldegebühr)	30
2. Appellate fee (Beschwerdegebühr)	20
3. Extension fee (Erneuerungsgebühr)	10
4. Penalty fee (Nachholungsgebühr)	10

For the determination of the date when payments are due of the amounts of annual fees due from the owners of patents, special registers are kept based upon the daily entries in the register of patents. The records in this register indicate the patents on which stated amounts are due arranged chronologically by days in a year. In these registers the amounts of fees paid are entered from the notations made on the proper documents by the cashier's office as referred to on another page. In case an annual fee

is not paid within six weeks after it is due, the owner of the patent is notified by the patent office. Such owner may then, within a period of six weeks (that is, within 12 weeks after the payment became due), make payment of the annual fee and of the additional fee of 10 marks, in case of failure of which, the patent is canceled.

The date on which fees are due for the extension of utility-model rights is likewise determined by a special comptroller (Schutzfristkontrolle). A short time before the expiration of the three-year protection granted, the patent office issues a notification. In case of failure to pay the fee on the day when due, the protection of the utility model is canceled. Future payment of a fee to redeem the lost right is not permitted.

The renewal fee for trade-marks must be paid before the expiration of 10 years from the date of application or the date of last renewal. If payment is not made, the patent office is required to notify the owner of the trade-mark that the same will be canceled because of failure to pay the fee. In case such owner does not pay the fee within four weeks after receipt of the notice, including not only the renewal fee, but also the penalty fee, cancellation follows. If the fee is paid the renewal is reckoned from the expiration of the former period of protection.

In case the patent utility model or trade-mark application fees are not promptly paid at the time the application is made, the applicant is notified and given a brief period in which to make such payment. In case of failure to do so, the application is rejected.

In case the appellate fees in patent and trade-mark matters and fees for the institution proceedings of annulment or revocation are not promptly paid, the proceedings are considered not to have been instituted.

The procedure in the payment of fees to the patent office follows the general commercial practice. These may be paid in various ways as follows:

1. By payment in cash.
2. By transmission through postal money order.
3. By bank check on the Imperial Bank.
4. By post-office check.
5. By bill of exchange.
6. By opening an account with the cashier's division of the patent office against which the fees are from time to time charged.

Detailed regulations govern the keeping of such accounts.

It is necessary to call attention to the fact that the cashier's office is directed to give receipts for such checks as are presented for payment of application fees, such receipts being noted on the receipt of payment of the fee issued in case of patent utility model and trade-mark matters. These checks must be at once presented for payment by the cashier's division.

Methods Pursued and Facilities Provided for the Examination of Applications.

The principal examining work is done by the "Vorprüfer" (preliminary examiner).

It is obvious that a single man can not himself do all the work. He must have assistance. This assistance has been organized in different ways. The system which until the last year was generally used was that every examiner had some "Hilfsarbeiter," assisting examiners, employees with university (Hochshul) education who are not appointed for life. Since they possessed a higher technical education and training they were practically charged with the principal examining work—with a certain independence—to make searches and to themselves draft letters to applicants and preliminary decisions. The examiner had the control, and it is true, the final responsibility.

The other system, adopted for some groups in the last years, is that the examiner is assisted by secretaries having a middle school education, and who are making investigations under the direction and constant control of the examiner.

Both systems have their advantages and deficiencies. The debate, which is to be considered the best one, is not yet closed. I believe that much depends upon the qualities and character of the examiner himself, and of course upon the qualities of his assistant too.

One inconvenience of the first system is that most of the Hilfsarbeiter, notwithstanding their higher education, can not expect to be appointed for lifetime (as "ständige Mitlieder"), and that the hopelessness of their position abates their enthusiasm for their work.

I do not know which system will prevail.

There is no general catalogue of literary technical references as the one which is being composed now in the Washington Patent Office.

To assist in the examination of patent applications with reference to their novelty, the preliminary examiners have the following records and literature available for constant consultation:

1. A collection of German patents subdivided into 88 classes with 480 subclasses and 8,000 groups. These groups are of such limited technical scope that it is generally easy to quickly determine in which class and subclass a given application falls and just where, consequently, search must be made. The examination of these patents is further facilitated by resort to a technical alphabetical index.

In the same manner as above described the patents of the five foreign States, including the United States, France, Great Britain, Austria, and Switzerland, are arranged in the same manner as those in the German Empire.

The entire collection is divided among 155 preliminary examiners who are assisted by a varying number of assistants with a technical education according to the difficulty of the subjects and the scope of the fields with which they deal.

2. A thorough library of a legal and technical nature which is systematically arranged to facilitate reference to various subjects. To assist in the use of about 900 publications which are on file, the following plan is pursued:

(*a*) Some of the publications are kept in constant circulation among the preliminary examiners.

(*b*) A special room is devoted to the display of publications arranged alphabetically.

(*c*) A permanent index or directory of subjects dealt with in these publications is kept.

A part of the library, namely, such books as are most extensively used are distributed on the desks of the preliminary examiners.

3. Atlases containing titles of utility models which are used for the publication of such titles are constantly available to the preliminary examiners.

4. Testing libraries (two) containing physical, chemical, and mechanical appliances are available in the patent office and are used for the examination and operation of machines, and mechanical and other apparatus submitted for patent as far as such tests are not made in factories, etc. Applicants are allowed to make demonstrations here.

5. Models belonging to applications and brought before the patent office are put aside in a shop, as far as they are not given back to applicants. But this shop is open neither to public inspection nor to the inspection of examiners.

APPENDIX F.

A COMPARISON OF THE PATENT LAWS AND PROCEDURE IN GERMANY, ENGLAND, AND THE UNITED STATES.

By A. DU BOIS-REYMOND
Of Berlin.

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PATENT LAWS AND PROCEDURES OF GERMANY, ENGLAND, AND THE UNITED STATES.

COMPARATIVE STATEMENT OUTLINING THE ADVANTAGES TO INVENTORS AND TO THE PUBLIC OF THE LAWS OF GERMANY, ENGLAND, AND THE UNITED STATES.

Of any given number of inventions that are registered in a patent office, only an exceedingly small percentage are really reduced to practice and a still smaller percentage are commercially successful. This fact is clearly demonstrated by the statistics of patent offices of all countries, and is therefore certainly no consequence of any peculiarities of patent law, but rather of a natural law governing technical progress, much like nature produces myriads of blossoms to generate some hundreds of fruits, of which, again, only a small minority finally becomes efficient in the reproduction of the kind.

But the public is actually only benefited by the very few survivors among inventions, and since patent law necessarily deals with the total of unsuccessful and successful inventions, it is exceedingly difficult to analyze, with any degree of certainty, any effects, either beneficial or detrimental, of special peculiarities of patent law on the well-being of the nation using that law. In fact, it is only possible to distinguish how certain peculiarities of patent law act upon the number of patent applications filed, the number of and importance attached to lawsuits dealing with patents and such like, so to speak, "external symptoms," from which only vague conclusions can be drawn regarding the question how the industry and commerce of a nation is thereby affected.

The most prominent difference between patent laws may be defined by considering a patent law as a collection of regulations partly intended to protect inventors against the public and partly calculated to safeguard the public against misuse of their individual rights by inventors. The nature of patents once being established as a monopoly granted to single persons, the question arises where the line is to be drawn in limiting the possibility of acquiring and using such rights.

In this respect the effect of legislation is strongly apparent. It is to a large extent a question of legal policy to determine the number of patents that are to be permitted to exist simultaneously, and the policy of divers nations differs very widely in this respect.

Germany has from the outset introduced and developed a system of very severe examination and of late years grants letters patent only for about 30 per cent of all applications filed.

The United States also, by means of preliminary examination, eliminate about 50 per cent of all applications.

England has lately introduced a system of partial examination, by which, however, hardly any appreciable percentage of applications are finally rejected.

But the arrangement provided by the English law, by which a patent can be filed in form of a provisional specification and completed later, nearly 50 per cent of applications are eliminated by the failure of the applicants to complete them.

Thus from the point of view of inventors taken as a whole Germany wastes about 70 per cent and Americans and Englishmen about 50 per cent of the labor expended in getting the value which is represented at any given time by the number of patents that are simultaneously in force.

This fact bears more or less directly upon the number of patents thus created, because the number of patent applications filed in these three countries by a given number of inhabitants does not differ very widely.

In England 100,000 inhabitants file about 52, in Germany about 58, in the United States of America about 59 patent applications in a year.

In Germany the total of granted patents is about 12,000, in England about 16,000, and in the United States about 35,000.

But the laws of England and Germany require increasing annual taxes, which are explicitly intended to reduce the number of useless patents and actually have this effect. The United States grant patents for a period of 17 years without charging any taxes.

The result is that in Germany the number of coexisting patents at the present time is about 40,000, in England about 40,000, and in the United States about 475,000.

Thus, if we consider the labor expended by inventors of either of the three nations to obtain the total value represented by coexisting patents, it would seem that the United States were in a very much better position than England and Germany.

But in reality a very large percentage of the coexisting United States patents would immediately become void if their owners were required to pay annual taxes to maintain them. Therefore the actual value of the total of coexisting patents in the three countries is most likely not much different, and if the labor expended for its creation is compared with the actual value produced, there is probably not much to choose between the three systems.

The real difference rather consists in that the United States legislator has less apprehension of misapplication of patent rights, and therefore has arranged the United States law accordingly, whereas in Germany the fear of endangering the public by an excess of liberality to inventors is strongest, and England takes a medium position.

This fear of inventors was very clearly and even cynically expressed by a strong party in Germany 40 years ago, when the question of introducing the present patent law was publicly discussed. But it is an interesting sign of its actual lack of foundation that it is slowly and surely decreasing as experience grows and as it is being gradually recognized that industry can not be better fostered than by encouraging inventors.

It is true that examination has not become more liberal in Germany, but rather the contrary. But that may be set down to the phenomenon which is more or less apparent in Europe, where many nations compete, having different systems of examination, with others granting patents without any examination. It is found that, without doubt, a much greater commercial value is attached to patents that have passed examination than those granted under the free and easy systems of the Latin nations. Also litigation is probably much diminished by thorough examination of patent applications. Thus the impression would develop that severe examination is, on the whole, a benefit to the public. And even in this point it is usually found that officials who have served for a larger number of years in the patent office are more inclined to leniency in examination than younger men of less experience.

The British system of examination has one appreciable advantage over the systems of Germany and the United States, and that is that the British examiner can not, by a final rejection, kill a hopeful invention in the bud. This certainly happens in rare cases in the United States and in Germany, though the actual importance of such cases is much overrated in consequence of the large amount of annoyance which they usually cause to the applicant.

The system of the United States has one decided advantage over both the British and German systems, that the United States practice is cast into very clear and rigid forms. This not only makes discussion with the United States officials comparatively easy and smooth, but also largely facilitates forecasts as to the probability of allowance and the formation of opinions on the scope of claims.

Though in England the same Anglo-Saxon inclination toward the strict observance of forms is certainly alive, or even possibly stronger than in the States, the English have not been in a position to develop a system of forms as adequate because, without the instrument of examination, the English office had no sufficient means of influencing the authors of specifications and claims. As a matter of fact, the system of partial examination which Great Britain has lately introduced has more influence on the wording of specifications than on the selection of the subject matter and it is to be expected that gradually more uniformity, especially in the wording of claims, will be developed.

In Germany the development of definite formulations has steadily increased since the beginning of patent practice, but the specific genius of the nation is particularly averse to stability and uniformity of forms of any kind and the spirit of the language is not well adapted to clear definition.

The apprehension of placing too much power in the hands of patentees has produced a number of regulations in the German law which are peculiar to it and have only partly been adopted by some other European nations that have more or less copied the German law.

Since, in German law, the applicant is not required to be himself the inventor, patents are granted without any question of authorship to the first comer. This has led to specific prescriptions regulating the proceeding in cases in which it is proved that the invention has been illegally appropriated. Such cases, however, are actually very rare.

A much more important regulation provides that persons shall be exempt from the effect of a patent who have used the invention independently of the applicant and before the date of application, without publishing it or applying for a patent themselves. This regulation has led to quite a number of interesting decisions, and to a certain small extent it acts to diminish litigation, because such prior inventors are thereby spared the necessity of trying to overthrow the patent.

The United States system of acknowledging the priority of invention independently of the time of application makes regulations of this kind unnecessary, though in actual cases of interference it seems probable that it must be much more difficult to arrive at just decisions than where the right of priority is only determined by the date of application, about which there can be no doubt.

Another regulation of the German law arising from the fear of inventors is what is usually termed the "working clause." This point will be dealt with more fully in another place, but here I would mention that the practical importance of compulsory working has been much overrated, especially within the last few years. Actually the number of lawsuits instituted against German patents for not being worked is exceedingly small and has been so from the beginning. Among the German public the feeling had been much divided pro and contra, but I believe it may be safely stated that the popularity of the working clause has also steadily diminished as experience progressed and people become convinced that it is adapted to cause a great deal of anoyance and very little good. I believe the working clause would have been abolished for some time if the German Government had not explicitly favored its maintenance for the purpose of using it in making agreements with other nations.

The adoption of compulsory working and compulsory licenses by Great Britain seems to have been the result of a more or less artificial movement organized by a small number of persons, who thereby hoped to increase their chances against foreign competition. It was taken up with a kind of almost hysterical enthusiasm in the beginning, but after a number of very rigorous decisions have been issued the public seems to have perceived that it was not getting any appreciable advantages out of the new law and was running a great risk of getting entangled in very vexatory lawsuits. The result is that of late years one does not hear of many lawsuits for revocation in England. Germany has amended the working clause two years ago so as to make it almost meaningless.

In Germany and in England the life term of patents begins with the day of application and lasts 15 and 14 years, respectively. In the United States the term counts from the date of issue and lasts 17 years.

Thus in Germany and in England the time consumed by examination is taken from the life term of the patent, whereas in the United States it is added thereto. Moreover, in the United States, the applicant can answer any official communication referring to the examination of his patent within a year after it has been mailed and thus it is easy for him to postpone the issue almost indefinitely. This is a decided advantage to the patentee, but it may be seriously questioned whether the public is not damaged by the risk of investing capital and labor in inventions which later may turn out to be the property of another.

England and Germany both have introduced rigorous regulations intended to prevent any undue prolongation of the proceedings of examination. In England a patent must be accepted within a year after filing, if it is not to be forfeited, and in German practice the office accompanies every official letter with a request to answer within a definite and comparatively short time, and if the applicant should not comply, the office can decide on the merits of the case. This German practice is very troublesome in many cases, especially where foreign applicants are concerned, residing in distant countries. The system also leads to a continual filing of requests for prolongation of the delay granted, and the mere labor of writing and mailing the answers is a considerable item in the annual budget of the German patent office.

Whether any serious benefit to the public is actually derived from this system of hurrying inventors in their dealings with the office may be seriously doubted. The international convention, the importance and beneficial effect of which appears to be steadily increasing, provides that valid foreign patents can be filed within a year after the filing of the patent at home. Thus the convention starts by recognizing that it is better to give inventors an increased opportunity thus to enlarge their chances of success than to protect the public against the obvious risk of making investments that may turn out to be useless, if it is found that patents, apparently good, are really anticipated by some foreign right of priority.

The two years by which the life term of United States patents exceeds that of German patents are practically not of much consequence. In Germany only 3 to 4 per cent of all patents are maintained to the end of their natural term, and since the total of all annual taxes is only about 5,000 marks, it seems evident that a longer life term would only be valuable in a small minority of cases. It may be argued, however, that this small minority of cases are naturally the most valuable and that no serious disadvantages seem to be derived in the United States from the gratis maintenance of a few hundreds of thousands of worthless patents.

The German law comprises an institution which exists neither in the English nor the United States law, the annullation proceeding, which is dealt with by special divisions of the patent office in the first instance. This proceeding can be instituted by every person and exclusively treats the question whether a patent is valid or not. The reasons for annulment are lack of novelty, interference with prior patents, and proof of illegal appropriation of an invention rightfully belonging to another person. Lawsuits for the first of these reasons are not admitted after the lapse of five years after the allowance of the patent. Appeal against the decisions of the patent-office division of annulment may be entered at the Reichsgericht.

This institution on the whole may be said to act satisfactorily and may be considered a necessity in Germany, because in this country the specific form of education of lawyers makes them peculiarly inefficient in dealing with technical matter.

The system of disclaimers in the English practice has some similarity with the German annullation proceeding, but it is not so broad either in the possibilities it offers, nor in its results.

I have no personal experience of the manner in which the United States courts deal with patents that are proved to have been granted by a failure on the part of the examiners to discover references that ought to have led to rejection.

In German law, as I believe also in English law, a patent application once abandoned, even during the proceeding, can not be taken up again and reissued as in the United States. But this difference is of small importance, because applications for the same subject can be indefinitely repeated if the applicant chooses so to do; and if no disclosure of the invention has taken place in the meantime, a patent will be granted after the prior application has been finally abandoned. If a right of priority exists, a patent can thus sometimes be secured by refiling, though the subject matter has been disclosed in the meantime. Thus, in such cases, it is possible to obtain a reconsideration and allowance after an application has been rejected by both the division of examiners and the appeal board.

The treatment of patents in German law courts for infringement will be dealt with more fully in another place, but here it may be said broadly that infringement cases, if pursued, are subject to two appeals, one intended to revise the whole subject and the second intended to correct only infringements or misinterpretations of the law that may have been committed by the lower courts. Practically the second appeal is more or less equivalent with the first, because the Reichsgericht has decided that the interpretation of the claims of a patent comes under the head of the interpretation of law.

As a rule the lower courts in Germany used, till quite lately, to be very inefficient. The percentage of decisions more or less absurd, from lack of technical understanding on the part of the judges, used to be very high. Lately a decided improvement has been brought about mainly by a very lively movement among the public, advocating the institution of special patent law courts in which technically educated judges were to sit. The consequence has been that the Government has ordered that all patent cases should henceforth be submitted to certain committees of the lower courts and has told off such judges to these committees which, from their personal education or turn of mind, have an inclination for technical matter. Partly also the judges as a body have been awakened to a better understanding of the growing importance of good decisions for the industries of the country.

As a rule, as far as my experience and knowledge reaches, the decisions of the English courts in patent cases are uncommonly good, a fact which, I am convinced, is largely due to a far greater popularization of at least the rudiments of technical knowledge and ways of thinking among Anglo-Saxons than among Germans.

In Germany experts are nominated and sworn by the court and are expected to give their opinions quite independently of the interests of either contending party. Their fees are also paid by the court and not by the parties. This system, though theoretically it would appear to be much superior to the English system of cross-examination of party experts, in practice can not be said to act very satisfactorily. The legal fees thus paid to experts for their services, are often ridiculously below what a person of high intellectual standing otherwise obtains for similar work, and consequently most men of any reputation do all that is in their power to avoid the obligation of acting as experts in the courts, and the judges are often forced to select experts among such persons who consider it a good advertisement to become professional experts.

According to German law, intentional infringement is a criminal offense, which may be punished by imprisonment. But as far as I am aware, no case of imprisonment for infringement of a patent has ever happened, and only a very small number of fines have been imposed. As a rule the public prosecutors dislike taking up cases of infringement, either from a feeling of incompetence in technical matters or possibly from a not altogether unjustified notion that offenses of this kind are, from a general point of view, hardly proper matter for criminal prosecution.

It is also a criminal offense in German law to use language in advertisements and on packings or legends on articles of manufacture which is adapted to create the impression that the articles thus designated are protected by a German patent, if such is not actually the case. This regulation has produced some interesting decisions, but their number is very small and the regulation does not seem to be of much practical importance.

ON THE ADVANTAGES AND DISADVANTAGES OF THE GERMAN METHOD OF DETERMINING PATENTABILITY.

If the patent laws of two different nations were exchanged, it is improbable that any appreciable difference would be introduced in either nation with reference to the question as to what is patentable and what is not. No legislature hitherto has succeeded in producing a working definition of "invention" and it is therefore left more or less to the personal judgment of examiners to decide upon the patentability question in every individual case.

The German examiners finally reject about 70 per cent of all applications for letters patent that are filed, and this comparatively high percentage of rejections, as compared with other nations, for instance the United States, with only about 50 per cent of rejections, is certainly not only due to a more rigorous standard of patentability. One cause of this phenomenon that can be clearly recognized by comparing official letters of different patent offices, is a well marked superiority of German examiners in the knowledge of languages. It may be safely stated that there is in the German office only a negligible minority of examiners who are not able to read English or French specifications. This results in the quotation of a large number of references which would never be brought to the notice of the applicant if the examiner were limited to the study of disclosure by drawings. To what extent this circumstance reacts upon the percentage of rejections of course can not be determined with any degree of certainty. But the opinion appears justified that whatever may be the exact number of rejections due to this cause, they are certainly just, and from this point of view this feature of German examination may be considered an advantage.

But, on the other hand, this feature is not a sufficient influence to explain so small a percentage of allowances. This is rather due to a strong apprehension that the existence of too many patents for comparatively unimportant improvements, or for practically useless innovations, would act as a brake on technical progress. This feeling was especially strong at the time when the advisability of passing a patent law was discussed after the erection of the Empire, and at that time there was a quite considerable number of notable industrial men who opposed the introduction of a patent law altogether. This feeling is gradually dying out, but its remnants are still clearly distinguishable in several institutions governing the method of determining patentability. It is hemmed in on all sides by a number of regulations intended to safeguard against too much liberality in allowing.

After filing, the application is placed in the hands of an examiner, and, by exchanging correspondence, or also by verbal conference with the applicant, it is reduced to a form in which the examiner considers it allowable. It is then passed to another examiner, who looks the file through and reports to the division of examiners, a committee of three. The division then announces the preliminary acceptance. The application is then published for a period of two months, and if no opposition is filed, is returned to the division of examiners, who pronounce the final allowance.

In actual practice all these arrangements have gradually lost their original importance and have become mere formalities. The number of applications that have to be acted upon in a given time has become so large that it is quite impossible that the committees can do anything beyond confirming the views developed by the examiner during his initial intercourse with the applicant. These formalities, however, are prescribed by the law and have to be gone through, and the result is, in the majority

of cases, that they have no other effect than to protract the proceeding. Practically the decisions upon the fate of applications are in the hands of the examiner alone, at least this is the rule, if the case is properly presented by the applicant or his attorney—that is to say, in the large majority of cases.

The question what is patentable and what is not, therefore, actually is decided by the ideal of a patentable invention developed in the mind of the body of examiners. These are mostly men of a comparatively very high standard of technical education and well equipped with scientific knowledge, and it is a general feature, which I believe can be observed throughout, that the higher is the standard of a man's theoretical knowledge the lower will be his estimate of the merits of a technical invention. This is especially true where the examiner has had comparatively little experience in the shop and the drawing office.

For their guidance, and in order to obtain as complete as possible uniformity of decisions, a number of rules have gradually been developed which govern the accepted interpretation of the law.

An invention is patentable if it consists in the application of novel means to a known purpose, or vice versa, or of known means to a known purpose, provided that this specific application of means was not known and that thereby an appreciable advance in the art is produced.

Novelty is determined by comparison with the state of the art as expressed by prior printed publications and by what is called public use in Germany. In both respects the language of the law is exceedingly vague. It provides that novelty is to be considered as lacking if in the prior printed publications the invention is described or if it has been publicly used in Germany in such manner that its employment by experts appears possible. More especially what is termed "public use" is very vaguely defined by the existing decisions, and the methods of ascertaining whether public use has taken place are exceedingly imperfect. In most cases affidavits of witnesses must be taken for this purpose, and since only appointed judges in Germany are authorized to administer oaths and witnesses' evidence can be considered more or less void if not confirmed by an oath, the patent office is obliged to call upon the lower courts stationed about the country to collect affidavits. The provincial judges, however, to a very large extent, lack technical understanding of the case, and the evidence thus produced is of a very imperfect nature. Thus a very large range for individual judgment is conceded to examiners.

Moreover, the wording of claims is not restricted by any very definite rules. Thus claims may be either descriptive or functional; they may contain alternatives; they may even in some cases be drawn simultaneously to a method and an apparatus for realizing the method.

This large freedom left to the discretion of examiners, taken together with the tendency consequent upon their high standard of theoretical and comparatively low standard of practical education, results in a great difficulty encountered by applicants of arguing upon the patentability of any given case.

This lack of definite and fixed forms appears to be a serious drawback of the system because it acts to diminish uniformity of decisions and thus leads to a feeling of insecurity in the public, more especially among foreigners, and thereby produces a comparatively large waste of energy.

The rules by which the principle of unity of an invention is determined are very strict. Every subsequent claim must be referred to the preceding claims and if the additional feature thus combined to the previously claimed features is of a character to permit its application to other combinations as well as those previously claimed, the claim referring to it is usually rejected for lack of unity.

This regulation is much grumbled at and, I think, with justice, since the only appreciable reason for limiting the protection of a single patent to a single invention is the loss of taxes that would ensue if the contrary were allowed, and it is felt, not without

reason, that the very large yearly profits of the German patent office ought to leave a considerable margin for liberality in this respect.

The German institution, by which every application preliminarily allowed by the division of examiners is laid open to inspection by the public, and final allowance is subject to opposition by any person who undertakes to prove that the subject was not patentable at the time of the application, may be considered as on the whole beneficial. It is true that only a very small percentage, about 3 to 5 per cent, of all applications are actually opposed, and even in these few cases the examiners' preliminary decision is rarely overthrown unless pertinent references can be quoted by the opponent which have escaped the attention of the examiner. But the institution has a decided moral effect in enhancing the public confidence in the justice of the official practice and in lightening the burden of responsibility borne by the office.

Public opinion on the sufficiency and efficiency of the opportunity for appeal against the examiners' decisions seems to be divided, but this subject will be dealt with more fully hereafter.

ON THE ADVANTAGES AND DISADVANTAGES OF THE GERMAN PATENT LAW PROVIDING FOR PUBLICATION OF APPLICATIONS FOR PATENTS IN COMPARISON WITH THE OTHER SYSTEMS, SUCH AS THAT OF THE UNITED STATES, UNDER WHICH APPLICATIONS ARE NOT KNOWN TO THE PUBLIC UNTIL AND UNLESS THE PATENT ISSUES, AND THAT OF ENGLAND, UNDER WHICH PUBLICATION IS MADE BEFORE ISSUE.

To form an opinion on the question whether it is beneficial or not to publish patent applications before allowance, it must first be ascertained what purpose such publication can serve. This is more or less determined by the provisions of the law and the practice governing the proceeding consequent upon publication. In Germany and a number of countries which more or less have followed Germany in the development of their patent law, such as, for instance, Austria and the Scandinavian nations, the opposition proceeding is only in part analogous to the United States interference proceeding. It is really a second edition of examination, in which the opponent takes the place of the examiner. The proceeding is similar in form to a lawsuit in which a committee of three examiners takes the place of the court.

Opposition can be based on three reasons: That the subject matter was disclosed prior to the date of application; that the subject matter is partly or completely claimed in a prior patent; and finally, that the invention is the property of the opponent and has been illegally appropriated by the applicant.

In the two former cases opposition is open to any comer, irrespective of the fact whether the opponent is himself the owner or originator of the prior patent or patents to which he refers.

The object of this institution, and the explicit intention of the legislators at the time of the passing of the patent law, was to get every possible safeguard against the allowance of too many patents for unimportant inventions. This is the great apprehension everywhere appearing in the German law and which, to my mind, is altogether unjustified, not only because there is actually not so much danger, as the legislators at the time believed, in the existence of a number of practically useless patents, but also because the measure introduced for obviating them does not really act according to the legislators' intention.

In the first place only those patent applications are opposed which attract attention, and such applications, as a rule, are not the most valueless. On the contrary, if the value of a patent is measured by a commercial standard, it is clear that commercial men will not take upon themselves the trouble and expense of opposing a patent which they consider without appreciable value.

What mostly attracts opponents is the applicant's name. If a business man, or a company, is continuously laboring under the influence of competition with some

other company, he or they will be much more prone to enter opposition against a patent application published under the competitor's name, than against an application for the same subject filed by some indifferent person. Thus one actual, and certainly unwelcome, consequence of the institution is the tendency found among many German industrial men, and even some large firms, of filing their patent applications through the agency of some other person. Such bogus applicants were much in vogue in Germany in the seventies and eighties of the last century and the custom is only slowly dropping out of use as the truth is being recognized that the system has a strong taste of dishonesty and at the same time is usually inadequate to warrant the desired secrecy.

The main reason why the institution of opposition is no little use in improving the selection of patentable matter among the total matter presented in all applications, is the impossibility of recognizing good inventions, as long as they have not been reduced to practice and have passed the test of the market. Thus it is really more of less left to chance which applications may be opposed and which not, and it can not even be said that obvious oversights on the part of examiners provoke opposition. As a rule a would-be opponent applies to an attorney because he thinks that such and such an application that is on the publications list, may become dangerous or inconvenient to his interests, and the attorney then institutes a search and files opposition on whatever grounds are found handy. The chances of a fight in such a case are always better than the chances of giving in without trying to fight.

It would therefore appear that the actual consequences of the opposition system can be only recognized by statistical methods. The percentage of patent applications opposed, and the percentage of rejections resulting from oppositions, ought to give an adequate illustration of the importance attached to the institution and its actual results. This, however, can hardly be said to be the case.

According to the showing of the official publications only three per cent of all applications filed are opposed and, of the applications opposed, about 25 per cent are rejected in consequence of opposition.

Though the public statistics do not show how many of these oppositions are based upon the argument that the subject matter was not new and how many on the argument that it was already claimed by a prior patentee, I believe it may be safely stated that the percentage of the latter oppositions is negligibly small.

This latter fact would tend to throw some light on the question whether the English practice is of any appreciable benefit to the public or not, because in England opposition is only admitted upon the latter ground. In fact, I may state that, in my own experience as a practicing patent agent, I have only encountered opposition in one single English case during a period of nearly 20 years. But in England the opposition system was introduced at a time when examination was not yet adopted and thus constituted almost the only protective measure against illegal appropriation of inventions.

The mere possibility of encountering opposition may act as a more or less efficient check on applicants, who otherwise would be tempted to impose upon the public by filing patents for obviously nonpatentable subjects, or to bluff competitors into submission for fear of law suits. Of course it is very difficult, if not impossible, to estimate this effect with any degree of accuracy. Possibly the introduction of the modern English system of examination, which is intended to discover and expose interferences, may actually have made the older system of publication quite superfluous.

In Germany I feel convinced that the apprehension of meeting opposition certainly does not act at all as a check on applicants. On the contrary, the universal rule is that its chances are considered to be negligible as compared with the chances of examination. If a man who intends to file a patent thinks as far ahead as to consider the possibility of encountering opposition, he will, as a rule, be determined to fight for whatever he can get.

Thus the impression of a review of the actual results obtained by this institution would be that they are practically nil. But I believe this would be saying too much after all. There is certainly not much of a practical result in the shape of actual numerical consequences to be found, but the moral effect is not negligible. The possibility of checking the examiners' decisions by means of a regular proceeding in which the opponent is heard as well as the applicant, and which, by appeal, may be carried into a higher court and there repeated, produces a feeling of security against unwelcome surprises, the benefit of which can not easily be overestimated.

It has been suggested now and then to abandon the system to avoid the loss of time incumbent thereon, and it is not impossible that a sufficiently strong party among the public might be found in favor of such a measure if it were seriously proposed. But the patent office itself has invariably declared that it attaches considerable importance to the maintenance of the system, because it tends to reduce the responsibility of examiners and to enhance public confidence in their integrity and capability, and thus to check criticism, to which so sensitive a body of men as inventors are is only too prone if they have encountered one or more disappointments.

To conclude, my opinion is that a nation introducing a new patent law will most likely reap more advantages than disadvantages by admitting at least some form of public opposition against the allowance of patents, but that a nation which already possesses a well-regulated system of granting patents in which preliminary publication and opposition has no place, and has not experienced any serious lack of confidence in the work of its examiners, is not justified in concluding from the experiences of Great Britain and Germany that it would do well to introduce such a system.

TO WHAT EXTENT THE PUBLICATION OF APPLICATIONS IN GERMANY DELAYS UNREASONABLY THE ISSUE OF THE PATENT, AND TO WHAT EXTENT ANYONE OPPOSING MAY INJURE AN APPLICANT BY UNJUSTLY DELAYING HIS CASE.

Publication, according to the German law, extends over a period of two months. This time therefore is invariably lost to all applicants who, from some reason or other, may be interested in an early issue of their patent. The law provides that no opposition is to be considered, which is not accompanied by a statement of the reasons upon which the opponent desires to found his opposition.

The object of this provision obviously is to prevent further loss of time, which otherwise might be caused by filing a skeleton opposition and requesting a delay for completing it. But the law does not provide that any subject matter adapted to justify a rejection, shall not be considered, for the sole reason that such matter has not been submitted simultaneously with the filing of the opposition. Practically, not only are skeleton oppositions invariably accepted and acted upon, but also, reasonable delays and, in case good reasons are given, even sometimes comparatively long delays, are also invariably allowed. The entire proceeding is also governed by a peculiar principle by which it differs from ordinary lawsuits. It is the explicit duty of the office to reject a patent application, if it acquires information showing that the subject of the application was disclosed or claimed in a patent prior to the date of application. If therefore an opponent has submitted any previous publications or patent, or has called the attention of the office to a case of prior public use of the invention within the Empire, which have not been considered and acted upon by the examiners during the process of preliminary examination, the office is obliged by law to act upon such matter, though the opponent himself may withdraw his opposition. It follows that the office is obliged to consider and act upon any prior publication whatever, which the opponent may submit during any part of the proceeding prior to the final allowance of the patent, and it would therefore be useless to refuse to grant reasonable requests for delay on the part of opponents, because the opponent could always, by more or less dexterous maneuvering, procure a certain amount of delay and could submit his evidence piecemeal, if he chose, and thereby delay the proceeding.

The rule therefore is that he gets the delay he requests, if it should not appear very clearly from the outset, that he is only intentionally applying a brake. The delay granted is usually a month, or sometimes two or even three months, in cases in which the opponent's residence is situated in a distant country.

As soon as the opposition and the argument submitted to support it, is in the hands of the office, a copy is served upon the applicant with a request to file an answer and again a delay of usually one month, or in cases of a complicated nature or distant residence, of two or three months is granted.

When the applicant has sent in his reply, the division of examiners considers the case, and if it comes to the conclusion that the case is in form for a decision, it decides without further correspondence with either parties and issues the decision to both simultaneously, adding the reply of the applicant to the copy served upon the opponent. The time consumed by the office in arriving at a decision may vary considerably according to the greater or less difficulty or complication of the case. But the rule is' that action of this nature will be issued after a delay of from two to six months.

The minimum delay an opponent can thus cause, would be one month extension of time allowed for substantiating his opposition, a week or a fortnight for getting the argument served upon the applicant and receiving his answer, and about two months for consideration and issue of action by the office. The total delay would thus run up to something like three months and a half. But it is certainly rare that the proceeding is got through in that time, if the opponent intentionally acts to delay it. As in all such proceedings, there are plenty of ways and means to protract, and I think it may be safely stated that, up to this stage, that is the decision by the division of examiners, a delay of from four to six months would be quite usual. This, however, is not the end, because now the opponent can appeal, if he chooses. Even if he does not appeal the law provides that the allowance does not become final before a month has elapsed after the issue of the allowance by the division of examiners. Appeal is considered to be legally filed, if an application to that effect is submitted in due form and the legal fee of 20 marks is paid. The law does not require reasons to be submitted in support of the appeal. The ill-disposed opponent may therefore file an appeal and request a delay for submitting argument and thus can add another month or more to the legal delay.

His argument is again served upon the applicant with a request to answer it and upon receiving the answer the committee considers whether the case is in form for decision and, if so, issues the decision, which is final, in the same manner as the first decision was issued by the division of examiners.

But, if the opponent at any time during the proceeding files a request for a hearing the committee is obliged to invite him, and since the personnel of the appeal divisions is comparatively limited, it often takes some time before a meeting can be brought together. It is true that every decision must be voted upon by and issued in the name of the entire committee. But cases which do not require hearing the applicant and the opponent, can be got through much quicker, because they can be carefully prepared beforehand by single members of the committee and accepted by the majority without any appreciable amount of debate. If, therefore, a hearing is requested by the opponent, it may be assumed that another month must be added.

Thus, by doggedly following up his chances, the opponent may easily succeed in adding another 3½ to 4 months to the first, making seven to eight months in all. It should be said, however, that for this purpose the opponent must act with considerable dexterity to avoid detection of his intentions by the office. If it becomes apparent that he is only trying to act the brake, the office will make considerable efforts to frustrate such an intention by cutting short the grant of delays and rigorously insisting upon their not being transgressed. It must also be said that cases of such unjust and mala fide oppositions are certainly very rare, if they happen at all. Few persons not professional solicitors possess sufficient knowledge of the routine of the office to con-

duct such a campaign with success, and professional solicitors will, as a rule, not lend themselves to a practice of the kind. But bona fide oppositions will very often require a much longer time if they are consistently pursued by either party, and it is not rare that more than a year, or even in some cases several years, are thus consumed in litigation. That this is always a disadvantage to the applicant, of course can not be maintained. Often enough the applicant will be quite content to keep his case pending in the office for as long a time as he can, and will, therefore, himself take steps to delay action as much as possible. Cases even have been known in which applicants have themselves employed persons to raise bogus oppositions to delay the issue of an application. This is mostly done to save the chance of obtaining a valid United States patent for the same invention, when the United States application has been filed later than 12 months after the German application.

A COMPARATIVE STATEMENT OF THE LEGAL EFFECT GIVEN TO A PATENT WHEN ISSUED BY THE PATENT OFFICES IN THE SEVERAL NATIONS; WHAT QUESTIONS ARE CONCLUDED BY THE GRANT OF A PATENT, AND WHAT QUESTIONS MAY BE LITIGATED IN THE COURTS.

With regard to the effect of a patent when issued by the patent office and as far as the leading nations are concerned, a line must be drawn between the Latin and the Germanic nations. The Latin nations grant patents "sans garantie du gouvernement" to quote the language of the French law. The claims of such patents therefore are valid only as far as their subject can not be proved to have been disclosed at the time of application.

The result is that an infringer can object that the patent is invalid and the court, before entering upon the question of infringement must settle the question of validity.

Germany, Austria, and the Scandinavian countries have followed the example of the United States in introducing examination and thereby have placed the patentee on a very much better footing. The person sued for infringement can not question the validity of the claims once allowed and the court can only investigate and decide whether the object manufactured or the method used by the defendant is covered by the claims.

England takes a medium position between these two systems inasmuch as, in examining patents, prior English patents only can be quoted and if they are believed to anticipate, the application can nevertheless not be rejected or limited unless the applicant agrees thereto. Thus in England examination only serves to collect the material upon which the courts may base their decisions, when called upon to investigate the validity of a patent. Moreover, the institution of disclaimers is intended to assist the courts.

Thus in England the responsibility for the validity of claims allowed by the office, is not altogether laid upon the office, but, by obliging the office to quote all prior disclosures discovered by examination, and by inciting the patentee to enter disclaimers, which are decided upon by the office, his responsibility is considerably lightened and the courts are much assisted in finding a true verdict.

German law also provides a safeguard against unjustified allowances in the shape of the annulment proceeding. This proceeding is quite separate and independent from infringement proceedings. Any person, whether sued for infringement or not, may apply to the patent office for the annulment of any patent if he can prove that, at the time of application, the subject matter was disclosed or was claimed in a prior patent or was illegally appropriated by the patentee. In the latter case only the person who believes himself thus damaged can apply for annulment.

The case is heard in a regular proceeding by a committee of the patent office, and against the decision appeal can be made to the Reichsgericht. In the Reichsgericht all annulment cases are placed in the hands of a certain senate, which thus acquires a considerable experience in these cases and enjoys a very good reputation for equity and intelligence.

If an infringement proceeding is once opened it can not be deferred by the opening of an annulment proceeding, though, of course, if the annulment proceeding is successful before the decision of the infringement proceeding the latter is cut off.

The effect of annulment proceedings is, however, limited by the provision that no application for annulment is to be received later than five years dating from the allowance. This has led to some very peculiar jurisdiction.

According to the letter of the law a patent is unattackable after the lapse of five years, and the question arose how to treat an infringer who could point out a prior disclosure of the infringing manufacture.

Now, since it is the duty of the courts to interpret the claims of the plaintiff's patent, though the law prohibits their annulling the patent, the Reichsgericht has ruled that just so narrow an interpretation shall be put upon the claims, that all subject matter disclosed prior to the date of application is not covered, irrespective of the fact whether such subject matter has been considered by the office in allowing the claims or not. This system of interpretation not only introduces into the jurisdiction of the courts a principle which the legislator explicitly desired to reserve to the patent office, because limitation of the scope of claims by means of such forced interpretation is very nearly equivalent to annullation, but it has also led to all but absurd consequences. The law forbids annulment, but allows interpretation. If a disclosure is submitted which covers only a part of the subject matter, the claim is limited by interpretation to the remaining subject, but if a disclosure is submitted which completely anticipates the claim, there is no room for interpretation and the infringer loses his case.

Once having pronounced the principle by which a claim shall be interpreted by comparison of its subject matter with the prior art as it is known at the time of interpretation and irrespectively of the knowledge of the examiner and the applicant at the time of allowance, the Reichsgericht has logically arrived at another important conclusion. It has ruled that this system of interpretation shall be applied in all cases in which it acts not only to limit the literal interpretation of the claims, but also to broaden the claims. Hence, if the court comes to the conclusion that, considering the state of the art, as it appears in the light of later knowledge, actually the patenteee would have been entitled to a broader claim than has been allowed, the claim is made by a more or less forced interpretation to cover more than would appear from the language used.

This peculiar and somewhat irrational consequence of the five years' limit is beginning to attract a good deal of attention, and it is to be expected that this provision of the law will be repealed in a not too distant future.

When infringement is proved, the infringer can be treated in three different ways according to circumstances. If he is proved to have intentionally infringed he can be publicly prosecuted and fined or even imprisoned for infringement. If he is proved to have infringed intentionally or by gross negligence, he can be made to pay damages, and if he is proved to have infringed neither intentionally nor negligently, as, for instance, if he had sufficient reasons to believe that his manufacture did not constitute infringement, he can be enjoined to discontinue such manufacture in future.

The question whether a certain manufacture infringes a certain patent can also be brought to an issue by suing the patentee. The plaintiff requests the court to decide whether the manufacture he is carrying on infringes the claims of a certain patent. This form of infringement proceeding is frequently made use of when a patentee warns a competitor that he considers his manufacture an infringement and intends to take steps accordingly unless it is discontinued.

In a similar manner a person who believes he can prove that he is a prior inventor of an invention, patented to another and that the patentee has illegally appropriated his invention, can sue the patentee for assignment of the patent to him.

Against the decisions of the lowest courts which hear infringement cases, the "Landgerichte" there is, according to the letter of the law, only one true appeal to the higher courts of the Provinces or States, the "Oberlandesgerichte." But against their decisions a proceeding can be instituted which is termed "Revision." It is limited in form, because the "Revisionsgericht," which, in patent cases, is the Reichsgericht, is only called upon to investigate whether any law has been infringed during the proceedings in the lower courts. Practically, however, in patent cases, this form is almost equivalent to a second complete appeal of the case, because the Reichsgericht has decided that the claims of a patent, as forming part of a public document issued under the provisions of a special law, are equivalent to the law itself, and therefore false interpretation of claims by the lower courts comes under the jurisdiction of the Reichsgericht in revision proceedings. Thus the most important point of every infringement case is actually subject to two appeals.

A COMPARISON OF THE GERMAN METHOD OF HANDLING INTERFERENCES BETWEEN PENDING APPLICATIONS, OR BETWEEN A PENDING APPLICATION AND AN UNEXPIRED PATENT, AND THE PRACTICE IN INTERFERENCE PROCEEDINGS IN THE UNITED STATES PATENT OFFICE.

To compare the German method of dealing with interferences between pending applications, or between a pending application and an unexpired patent, with the corresponding practice in the United States Patent Office, it should be remembered from the outset, that the United States law dates back the origin and therefore the priority of patent rights to the conception of the invention itself, whereas the German law allows an almost absolute claim to priority to the earlier applicant. For this reason claims to priority need not be decided upon by the German patent office and the whole investigation that is necessary, is to decide the question whether an interference exists in substance. This, however, is not quite as simple a matter as it is under the practice of the United States, because, under the German practice, much more liberty of language is permitted in the wording of claims, and claims once formulated are not interpreted as literally as under the United States practice.

Therefore whilst under the United States practice it is left entirely to the examiner to decide whether there is interference between two claims or two or more sets of claims, in Germany this question remains open to debate among the parties concerned and the examiner, or eventually the committee of examiners.

The proceeding is this: If the examiner thinks that the claims filed in any application interfere with the claims of a prior application, which is pending and not yet published, he issues a communication to that effect to the applicant, in which however only the fact is stated, without naming the prior applicant or otherwise disclosing any part of his application. In this letter he suggests that the proceeding referring to the later application shall be postponed, until the prior application shall have been published or finally decided upon.

The applicant may protest against postponement and if he can submit any good reasons for continuing to discuss points which are not touched by the prior case, the proceeding is usually continued. Otherwise the proceeding is postponed, and as soon as the prior application is published or finally rejected, the later applicant is informed of the serial number and is requested to limit his claims accordingly or to submit argument proving that there is no interference. The later claims are eventually cut down to what is proved to be left open by the prior claims, as in any ordinary examination proceeding.

If the prior application is already published or allowed and issued there is no true interference proceeding. The earlier application is simply quoted as a reference by the examiner and the conflict is decided without the assistance of the earlier patentee by limiting the later claims or allowing them unaltered as the case may be.

This system therefore certainly has the great advantage of simplicity over the system in practice in the United States, but it may become a source of injustice in case the later applicant is really the earlier inventor.

Thus, as the German law deals with interferences, the question of priority is decided by the dates of application and the question of substantial interference is debated. In the United States, vice versa it is only the question of priority which is debated.

This, therefore, comes down to the question whether it is better to attach the right of priority to the time of application alone or to the time of the making or conceiving the invention. The latter method is decidedly more just and the former is much less complicated.

THE EFFECT OF THE ACTION OF THE PRIMARY EXAMINER, OR A BOARD OF THREE, IN THE GERMAN OFFICE IF IN FAVOR OF THE PATENT.

According to the letter of the law, the action of the primary examiner is never final, whether he is in favor of or opposed to the issue of the patent. In either eventuality the case is referred to a board of three, usually one jurist and two technically educated men, and by these a decision either for rejection or for acceptance is passed. But the acceptance of the application by the board of examiners is not immediately followed by allowance. The application is first laid open to public inspection and opposition for a period of two months. When this time has passed unused, the application is for a second time voted upon by the board, and if the majority is in favor of issue the allowance is pronounced, which is then final.

But should any member of the board produce some reference not considered during preliminary examination, the board is entitled to return the application once more to the applicant and to require him to limit his claims accordingly, unless he can prove that the new reference does not apply. In such cases it may become necessary to repeat publication, because no allowance is considered to be in proper form if the public has not been previously given an opportunity to oppose it, and it may happen that the new reference requires a remodeling of the claims, which thus would appear in the final issue in a form in which they may be more objectionable to a competitor than as originally worded.

One provision of the law further modifies this system and is considered of some importance. When the primary examiner has rejected the application he is excluded from voting, and his place must be filled by some other examiner to complete the committee.

In actual practice, however, this complicated system is much simplified in its action in the vast majority of cases. To begin with, only 5 per cent of all applications are opposed, and in only 30 per cent of oppositions is the opposition successful. Thus the decision of the board of examiners, if in favor of allowance, practically is final in 95 per cent of all cases. Moreover, the number of applications that have to be acted upon in each session of the board of examiners is so large that not many minutes remain on an average for every case, and the result is that the board nearly always accepts the examiners' vote whether in favor of or opposed to allowance.

Also the cases are exceedingly rare in which fresh references are discovered and quoted after the application has been withdrawn from publication.

In practice the opportunity of intercourse and free discussion between the applicant and the primary examiner are very much better and easier than with the board. The examiner can always be interviewed personally, and though it is true that the law also provides for hearings before the board of examiners, firstly, the latter are entitled to refuse a hearing if they do not consider it necessary for a full understanding of the case, and, secondly, even when granted, a hearing before a committee is a comparatively formal function in which it will frequently happen that no answer is vouchsafed to the applicant setting forth his case and no question is asked, so that

he does not get the advantage of a discussion and can not ascertain whether his arguments really apply to the points to which the committee's chief objections refer.

Consequently an applicant who handles his case properly will carefully avoid letting it pass out of the hands of the primary examiner before he has absolutely exhausted all possible endeavors to come to an agreement with him, and when an agreement is reached the subsequent proceeding may be looked upon as very rarely anything more than a mere formality.

Thus, although the legislator has built up a complicated system adapted to check the personal influence of the primary examiner, practical use has actually cut down all these safeguards to a process very much resembling examination as conducted in the United States, where the examiners' decisions in favor of allowance are final.

When an application is rejected by the board of three appeal can be had against their decision to a board of five, usually three technically educated members and two lawyers. In the appeal proceeding the whole case is gone over from the beginning. Claims can be put in that were originally omitted, and other claims can be abandoned or amended; also fresh references can be opposed.

If it appears that the case has been rejected for formal reasons, or it is otherwise not sufficiently developed to make the finding of a verdict possible without further investigation, it can be referred back to the board of examiners and eventually appealed a second time if rejected by them.

WHAT APPEALS ARE ALLOWED WITHIN THE GERMAN OFFICE, AND ARE THE NUMBER OF APPEALS AND THE PROCEDURE THEREON MORE SATISFACTORY THAN THE PRACTICE IN THE PATENT OFFICES OF OTHER NATIONS, AND WHY?

According to the letter of the law a formal appeal exists in Germany only against the decisions of one body, the anmelde-abteilung (division of examiners); but the law provides two different forms of appeal against these decisions. One form is not limited to any specific time after the issue of the decision and can therefore be entered at any time until the decision has either become final or has been overtaken by the further proceeding. Appeals of this kind do not refer to questions of patentability, but they may be entered against any decision referring to other questions, especially questions of form. Thus, for instance, if an applicant has requested to have the proceeding postponed for any reason and the division of examiners decide to reject the request the applicant can appeal. No fee is payable for appeals of this kind.

The appeal goes to the beschwerde-abteilung (division of appeal) and the decision of the division is final.

This form of appeal is hardly ever used. It is intended as a check on the division of examiners, especially in matters of form.

In questions of patentability, such as examination for novelty, oppositions, and interferences, appeal must be entered within a month after the issue of the decision of the division of examiners and requires payment of a fee of 20 marks. The decision of the division of appeal in such cases is also final. In cases of opposition appeal can be entered either by the applicant or the opponent.

Practically, however, it may be said that questions of examination are subject to two appeals. All applications are first passed into the hands of a primary examiner, and though his decisions are not final in form the division which is called upon to confirm them hardly ever introduces any alteration. The law obliges the primary examiner to issue a special form of official letter (vorbescheid) in case he intends to oppose allowance, and upon receiving such a "vorbescheid" the applicant can alter the language of his specification and claims or otherwise discuss the subject matter with the examiner. If, however, he does not succeed in arriving at an agreement with the examiner, he is not left in any doubt of the examiner's position, and by submitting proper argument can specially request the board of three, or division of

examiners, to repeal the primary examiners' preliminary decision. Also, in voting on the patentability of the case the examiner is excluded from the board of three if he has issued a "vorbescheid" before the case is passed to the board. Thus this system practically acts more or less in the same manner as if the law had provided a separate formal appeal to the board of three against the primary examiner's decisions.

Complaints may be heard not quite unfrequently among the public that there is no possibility of correcting the decisions of the appeal division, but statistics do not seem to show that such complaints are justified. Of all patent applications filed in Germany 9 per cent are passed to the board of appeal, and of this small percentage only in 22 per cent of cases is the primary decision repealed. I do not even believe that it can be justly stated that these few cases are among the most important inventions. On the contrary, the necessity of appealing is in a large percentage of cases brought about by incapacity of the applicant in handling his own case before the primary examiner and the division of examiners. Certain indications of the state of the case are often hidden in specific language used in official letters, and persons not thoroughly acquainted with the practice, and thus not aware of the risk they are running by omitting to submit proper amendments, often rush a case into appeal long before their resources in the preliminary stage of examination have been exhausted. In such cases the impression will remain that the opportunity of appeal granted by the law is insufficient.

Nevertheless it may be stated that there is a certain disparity between cases which have been rejected by the division of examiners and in which therefore appeal is directed toward procuring allowance and cases which have been subjected to opposition and have been allowed by the division of examiners, so that the opponent's appeal is directed toward procuring a rejection. In the former case a rejection pronounced by the board of appeal is absolutely final, but in the latter case an allowance pronounced by the board of appeal, though final in form, practically is still subject to an annulment proceeding.

As far as the number of appeals is concerned, there is not much difference between Germany, England, and the United States. But there is one very conspicuous difference, which consists in that only preliminary examination is decided by a single official. Appeal against the primary examiner's decisions to the division of examiners is heard by a board of three in the first instance and a board of five in the second. By this institution it is intended to exclude as much as possible the influence of personal peculiarities of the individual examiners. There can be little doubt that this object is rarely attained in such cases in which the applicant finds himself encountered by an especially strong individuality on the part of the primary examiner But such cases are exceedingly rare, and it may be questioned whether they justify the complication thus introduced into the proceeding. Every kind of discussion with a plurality of men constituting a board is much more difficult and slow than discussion with a single official, because it is out of the question that arguments submitted in writing can be read by all members of the board, and though oral hearings are admitted they are not as effective as personal interviews with the primary examiner, because they are necessarily much more formal, and thus do not imply discussion and conversation, which a single examiner can hardly avoid, even if he should be averse thereto.

One other circumstance also acts to render the decisions of the appeal boards less reliable. Naturally the number of cases passed to appeal is very small compared with the number of cases handled by the primary divisions, and correspondingly the number of appeal divisions is very much smaller. As a rule, officials of long standing in the office, who have had opportunity to collect considerable experience, or persons otherwise of superior standing, are put on the list of the appeal divisions, in order to make them as efficient as possible. Nevertheless from the fact that they are very few in number, as compared with the examiner's divisions, they can not be as thoroughly specialized, and it will often happen that a member who has no specific knowledge of the

subject whatever but only can rely upon a general technical education and experience in similar branches of the art, is called upon to decide highly specialized questions.

On the other hand, the comparatively low number of appeals acts to render the appeal boards more efficient, because it leaves them more time for every case and, where they lack specific knowledge, they can and do make up for it to a certain extent by greater painstaking than the examiners' divisions. On the whole, therefore, I believe it may be safely stated that the number of appeals provided by the German law and the arrangement of the proceedings is adequate and efficient. I can not venture to formulate any comparative criticism referring to the work of English and American officials in the corresponding proceedings in those countries, because I lack personal experience in such proceedings.

ON THE ADVANTAGES AND DISADVANTAGES OF THE ANNULMENT PROCEEDING IN THE GERMAN OFFICE, AS COMPARED WITH THE METHOD OF SETTLING SIMILAR QUESTIONS IN THE COURTS OF THE UNITED STATES AND THE METHOD OF TREATING THE SUBJECT IN ENGLAND.

It is very difficult to arrive at a definite opinion on the comparative advantages or disadvantages of legal institutions in different countries, because the effect of legal institutions only partly depends upon such institutions themselves, and in part also on the qualities of the persons to whose handling they are intrusted. It is a peculiarity of German education that it is in one very important respect much more specialized than education of a corresponding standard in England or the United States. Persons educated in Germany for professions not dealing with technical matter are as a rule much less apt to enter upon the manner of thinking common among engineers, and to form clear ideas of the nature of technical problems, than equally well educated persons in England and America. The consequence is that in Germany courts in which the judges' benches are occupied only by jurists and in which jurist barristers plead the cases are, with few exceptions, mostly only found in the higher courts, peculiarly inefficient in deciding technical questions. This peculiarity and the consequent lack of confidence among engineers and industrial men in the capability of the law courts, where technical matter is concerned, on the one hand has been the origin of the institution of separate annulment proceedings heard by committees of the patent office, in which a majority of technically educated members sit, and on the other hand is the cue to advantages derived therefrom to the German public, which possibly would not be experienced if the institution were transplanted into another nation.

But there can be no question that a certain amount of advantages is purely due to the institution itself. An applicant addressing technically educated men can in most cases use much shorter and more precise language, without needing to fear fatal misunderstandings. He can also illustrate his argument by diagrams, drawings, and models without being obliged to give elementary explanations, and by this means the proceeding is certainly simplified and shortened.

Moreover, the specific German system of examining experts tends much to complicate the proceedings in the ordinary law courts, and this is avoided where the members of the deciding committee themselves are expected to be experts. It is true that their being publicly considered experts, in some cases in which, in fact, their knowledge or experience is insufficient, renders them nevertheless unwilling to procure expert opinion, though they are authorized by the law to do so.

One other peculiarity of the system acts more or less detrimentally. The committee nominated to decide on applications for annulment is mostly, if not always, composed of the same members which have to hear appeals against the decisions of the examiners. Therefore, if a case has been appealed during the examination proceeding, it is usually brought before the same judges when, later on, an appli-tion for annulment is entered. Since the prior decision in such cases necessarily is

an allowance, the same committee is thus called upon to annul a patent the allowance of which it has previously decided against the opposition possibly of the same parties. If no new arguments of considerable weight are submitted, there will remain a natural tendency to confirm the previous judgment.

But this deficiency of the system is to a great extent corrected by the possibility of appeal, which is heard by the Reichsgericht. The decisions of the Reichsgericht in annulment proceedings, though issued by judges not being technical experts by education, have been in the long run of decided advantage to the public, because they have given the Reichsgericht, which is recruited from the best jurists in the country, an opportunity to correct many erroneous or detrimental interpretations of the law, originally adopted by the patent office. The deficiency of the judges of the Reichsgericht in technical matters will now and then lead to errors, but, on an average, decisions based upon misapplication of scientific argument are hardly more frequent in the Reichsgericht than in the patent office, owing to the circumstance that the senate deciding patent cases is filled with picked men and has ample time to fathom the questions at issue.

Since annulment proceedings are quite independent of infringement proceedings, which are heard by the ordinary courts, the opening of an annulment proceeding by a person sued for infringement does not lead to any postponement, though the infringement proceeding comes to an end, if the defendant succeeds in getting an annulment prior to the final decision in the infringement case. A consequence of this independence of the two proceedings is that much time and labor is expended unnecessarily in the courts dealing with the infringement proceeding. Also, since a patentee, in suing an infringer, will have the tendency to interpret his claims as broadly as possible and the same patentee in defending his patent against an application for annulment will tend to construe his claims as narrowly as possible, it may happen that the application for annulment is dismissed on a much narrower interpretation of the claims than that simultaneously applied by the law courts, who thus decide against the infringer, though they could not do so if they were obliged to adopt the same interpretation of the claims as the patent office division for annulment. This discrepancy, however, finds a more or less efficient corrective in the Reichsgericht, where appeals in infringement and in annulment cases are brought before the same senate. Nevertheless this peculiarity may be pointed out as a disadvantage of the German system as compared with the English and United States systems, where the invalidity of a patent and the question of its infringement by certain manufacturers are dealt with by the same court.

One institution introduced into the German law on annulment proceedings since 1894 has not justified its adoption and has led to certain logical consequences which are peculiar to say the least.

Patents more than 5 years old are exempt from annulment proceedings for lack of novelty. If therefore a person is sued for infringement of such a patent and can bring forward evidence proving that the subject matter of the claim was partly anticipated at the time of application, nothing remains to the courts but either to decide in favor of the patentee or to interpret his claims as if the previous disclosure had been considered during examination. The latter course has been adopted and sometimes leads to interpretations that are obviously at variance with the language of the specification and claims. Moreover, in cases in which the previous disclosure is complete no interpretation short of annulment is possible, and since annulment is excluded by law, a decision must be issued in favor of the patentee.

This peculiar jurisdiction, which may be designated as an effort to unite two opposite extremes both logically developed from different provisions of the law, is attracting much criticism at present and will probably eventually lead to a repeal of the five years' clause.

It remains to be mentioned that a considerable movement has been carried on for a number of years by a party desiring to institute similar special courts for deciding on infringements. This movement has developed so far as even to take the form of repeated petitions to Government signed by numerous prominent men. Although the movement has hitherto met with very serious objections and has little chance of eventual success, it is nevertheless a sign that courts composed of scientists and jurists, like the annulment committees of the patent office, enjoy the favor and confidence of a large part of the German public.

DOES THE GERMAN PATENT LAW BENEFIT INVENTORS OR THE PUBLIC MORE THAN THE PATENT LAWS OF OTHER NATIONS, AND TO WHAT EXTENT ARE ALIENS DISCRIMINATED AGAINST BY THE GERMAN LAW?

To definitely answer the question, whether any patent law benefits the inventors and the public of the nation using such law, it would be necessary to compare the revenue derived by the body of inventors and by the State with the expenses paid for the allowance and maintenance of the total of existing patents. As soon as single cases are considered even the revenue of very successful patents is, as a rule, largely counterbalanced by the losses borne by the overwhelming majority of unsuccessful inventors. Nevertheless, the mere fact that all commercially and industrially successful nations have adopted some system of patent legislation seems proof sufficient that some benefit to the nation results therefrom, and the not less apparent fact that all successful industrial and commercial men take out patents seems sufficient evidence that inventors are likewise, on an average, benefited by patent law. But to measure the degree of benefit derived from patent law seems a hopeless task, at any rate in the present state of development of statistics.

Experience seems to show that certain very marked differences in patent laws of different countries have an appreciable influence upon the development of invention. Thus, the fact that the Latin nations, who have not adopted examination, are, taken as a body, less successful in industry and commerce than the Germanic nations, who have, tends to show that examination is the superior system.

England, though eminently successful in commerce and industry, and certainly quite in the front in technical invention, has found it advisable to adopt examination as soon as it began to feel the competition of the rapidly increasing industry of Germany and the United States. That is another symptom in favor of examination, and hence it may be surmised, with some appearance of probability, that a patent law providing for examination, like the German law, benefits inventors and the public to a higher degree than the patent laws of the Latin nations.

But as soon as we come down to details the question arises, how any specific provision would act if it were introduced into the law of another country, and the answer we will usually arrive at will be that no appreciable effect could be predicted. There are instances of this kind extant, as by the English bodily transplanting the German working clause into their law. But, after a series of more or less Draconic decisions, far surpassing in the attention they attracted at the time any actual effects of the same law in Germany, this clause has quietly dropped into obscurity and seems to remain there until it may perhaps be swept away by some future reform.

Technical and commercial success and progress of a nation is due to various other causes, such as the individual character and talent of the nation, peaceful times and good government generally, and even invention seems to be influenced much more by circumstances foreign to patent law. Thus, though it is more or less generally recognized by patent experts that examination is a beneficial institution, the French nation, without examining patents, has quietly come to the front and has surpassed nations otherwise more successful in the arts of motoring and flying. Apparently this branch of invention has a specific attraction to the French mind, and this influence is much stronger than any perfections or imperfections in their system of granting patents.

Hence, I believe it may be safely assumed that no specific benefit, beyond what may be attributed to well-regulated patent systems generally, accrues to the German nation from their patent law, at any rate not more than the English and Americans derive from theirs.

It is considered a fundamental principle in Germany that absolute equality shall exist in patent law between indigenes and aliens, and the few clauses in the law that refer to aliens at all are of a quite formal and unimportant nature. Thus aliens are required to nominate a representative residing in the country and are obliged to make certain advance payments in case they desire to institute lawsuits. Otherwise the law itself does not in any way discriminate between aliens and indigenes.

It might be asked with somewhat more foundation, in fact, whether the law, as it is, is fairly administered to aliens as well as to indigenes; and the impression is not unfrequently met with among foreigners that they have been unjustly treated by the office for the reason that they were aliens. But this impression is quite unfounded. Chauvinism of any form does not enter into any part of the proceedings of the German patent office, and, on the contrary, politeness toward foreigners is now and then carried further than, I understand, is the case in the patent offices of any other of the leading nations. Thus, I have now and then experienced cases in which English and French applicants were allowed to plead their cases in their own languages.

Also in its interpretation and practical administration of the International Convention Germany may be said to be the most liberal of all nations, thus demonstrating that no hostile feeling exists against aliens applying for patents.

One exception, however, should be mentioned. Lately the question of amending section 11 of the law, referring to compulsory working, was debated, and voices among the public were raised recommending provisions by which an explicit difference in the treatment of aliens and indigenes should be adopted. But, though more or less appreciating the movement with regard to this particular point, the German Government refused to admit any language formally expressing such a difference. A formula was eventually found which served the purpose without explicitly referring to nationality.

WHAT BENEFITS ACCRUE TO INVENTORS OR TO THE PUBLIC FROM THE GERMAN LAW CONCERNING THE WORKING OF PATENTS, AND TO WHAT EXTENT IS THAT LAW DETRIMENTAL TO THE INTERESTS OF FOREIGN INVENTORS SEEKING GERMAN PATENTS?

A discussion of the effects to the German law concerning the working of patents must needs be more or less academical, because that part of the law has been radically changed by an amendment passed only last year, and no decisions have been published since that time. All actual experience, therefore, attaches to the repealed section 11 of the patent law, and the influence of the actual law can only be surmised.

But from the experience with the abolished law some conclusions of general interest may be derived. The intention of the legislators in introducing what is usually termed "compulsory working" is to procure to the country all the possible benefit derived from an invention which is protected by a national patent, the idea being that such benefit mainly consists in an enlargement of industrial establishments, from which results a corresponding enlargement of the number of workers who are thus supported by the work of other nations. It is argued that if the patented manufacture is produced abroad and imported the effect upon the home country is the reverse, because the home consumer is forced to buy the manufacture and thereby to support foreign workers.

If this argument were sound, it must nevertheless be questioned whether such an effect could be obviated by the simple provision by which a patent can be revoked if not worked in the country.

From the outset, however, considerable doubts must be entertained whether the argument is not radically false. It only considers one part of the advantages accruing to a country from the introduction of a new invention; that is, the possibility of manufacturing and selling the patented article.

A superficial review of the actual effects of inventions which we can observe displays a number of other effects which mostly are of a very complicated nature. Take, for instance, the introduction of a new composing machine, such as the linotype or monotype. The introduction of these machines in printing offices largely increases their output; newspapers and all other printed matter become cheaper; since the demand for printed matter is almost insatiable, or at any rate increases as it is satisfied, there is no appreciable reduction of compositors' wages. But there is an increase of the demand for printing machines, for paper, for bookbinders' work, and probably a number of other items, which could only be traced by special study and close observation. All this industrial growth may far surpass the industrial growth immediately resulting from the manufacture of the patented article. In the present instance the patented article is the composing machine and the beneficial effects which have been outlined are produced, whether the composing machine is manufactured in the country or abroad.

Now, as to the effect of compulsory working. It should be remembered that, in order to produce these machines, a large and very specialized organization must be produced. It is commercially impossible for a United States manufacturing company to build factories in every country in Europe and from there to supply the demand of that country. If the law provides that a patent is void, if not worked in the country, the only possible result of such law can be that United States manufacturer must do without a patent. It may be that the lack of patent protection will not much interfere with his business. In that case the law has no effect. But it may be that he finds that he can not introduce his machines without patent protection, and in that case the result of the law is that a large part, if not the major part, of the benefits to be expected from the invention are thereby banished from the country.

Thus not only is the intention of the legislator radically misplaced, but the measure he has taken to realize his intention is either ineffective or detrimental.

But not only from this point of view is compulsory working inadequate to achieve the results sought for. It has taken nearly 15 years—that is the natural life term of a German patent—to so develop the monotype composing machine that it is enabled to satisfy all the requirements of printers. In this time more than 60 patents have been taken out by the Monotype Co., in Germany, and the greater part of these patents is for minor improvements. What can be practically expected from the working clause in the law is that some German company, likewise building composing machines of some other type, finds its business disturbed by one or the other of these patents, which may refer to parts common to different types of composing machines. If such a company can not come to an agreement with the monotype people, it would open a revocation proceeding and after one or two years of litigation would succeed in getting the objectionable patent revoked. Such a microscopic result of a very considerable amount of labor and expense on the part of the litigating parties and the courts would have no appreciable influence whatever on the course of the development of the art and industry.

Actually some linotype patents were revoked several years ago. But, notwithstanding, at the present day there is not one of several German companies left to compete with the Ameriean companies in the manufacture of composing machines.

I do not know of a single instance in which a firm, to comply with the working clause of a foreign patent law, has started a bona fide workshop to supply the market of the country governed by such law, and it stands to reason that in the great majority of cases it will be commercially much more rational to abandon the foreign patent and endeavor

to maintain, without patent protection, whatever footing in the market had been gained.

The only instance of simultaneous manufacture of an invention in several countries which has ever come to my knowledge has been carried on by such companies who had already established branch manufactures in the several countries which they were supplying. But in such cases the establishment of branch manufactures is not due to any provisions in the patent law, but rather to a number of other circumstances of much greater commercial importance. In such cases therefore the working clauses in patent laws must again be considered as absolutely inadequate to realize the intentions of the legislator. Their actual effect is to cause a considerable amount of annoyance to foreigners, and even more apprehension than annoyance, and thereby to prevent the application of a number of patents which otherwise would be taken out and possibly exploited.

The teachings of statistics fairly bear out this view of the question. In Germany, taking the average over the time in which the now abolished section 11 of the patent law was in force, something like three patents in a thousand were attacked for not being worked, thus demonstrating that the public has only in very rare exceptions availed itself of the opportunity offered by the law.

The amendment of the German law, which is in force since the middle of 1911, substitutes compulsory licenses for compulsory working, and judging by the previous experience the same arguments can not be opposed to this restriction of patent monopoly. To take one instance, in the year 1898 a German company had purchased the rights of Mr. Tesla's patents for polyphase current machines and threatened all companies employed in electrical business with lawsuits in case they would not discontinue the installation of polyphase work. But the company who had purchased Mr. Tesla's rights was not only not supplying the demand, but was moreover from a number of reasons incapable of supplying it at the time. Several large companies who were desirous of developing and using polyphase machinery immediately sued the owner for revocation of the Tesla patents and the patents were revoked. Now, there can be no doubt that if Mr. Tesla had managed to sufficiently develop his inventions and offer their purchase to the public he would have realized a very large revenue, and though it may be considered just that an inventor should not obtain the whole revenue resulting from his invention, if he does not manage to develop it commercially and industrially, certainly from a point of view of justice a certain amount of that revenue is due to him, because the development of the invention by others is from the outset based upon the invention they got from him.

Therefore, though the country was benefited in this instance by the revocation of Mr. Tesla's patents, such benefit was, under the old law, only obtained by an unjust treatment of the inventor, and exactly the same benefit would have been reaped by the country if, instead of revoking the patents, the inventor had been compelled to grant licenses to the German companies. But in that case he also would have been a gainer to an extent justly proportioned to his merits.

According to the amendment of 1911, however, revocation is not altogether abolished, but is reserved to cases in which the patentee manufactures exclusively or mainly abroad. That the institution has thus been in part maintained is, however, probably much less due to any surviving remnant of belief in any actual benefits to be reaped therefrom than rather to a desire on the part of the German Government to keep a card in hand to be played out in negotiations with other countries, aiming at agreements to mutually discard compulsory working for the benefit of residents of the two countries.

COMPARISON OF THE OFFICIAL GAZETTE OF THE GERMAN PATENT OFFICE WITH THAT OF ENGLAND AND OF THE UNITED STATES WITH REFERENCE TO ITS VALUE FOR THE PURPOSE FOR WHICH ISSUED.

The official gazettes of the United States, England, and Germany are the following:

The Official Gazette of the United States Patent Office.

England, the Official Journal.

Germany:

(1) Patentblatt and Liste.

(2) Warenzeichenblatt.

(3) Blatt für Patent-Muster- und Zeichenwesen.

The English Official Journal is divided into several parts, which are separately published. One of these parts contains abridgments of granted patents and the other a list of applications, acceptances, publications of patent applications and granted patents, and finally a list of registered trade-marks. Besides, this part of the Official Journal also contains official publications, such as amendments of granted patents applied for. In a separate appendix entitled "Reports of Patent, Designs, and Trade-mark Cases" decisions of the English courts and the English patent office concerning patents, designs, and trade-marks are published. The American Official Gazette combines all the matter in one edition which in Germany and in England is published in separate pamphlets. One result of this is that the single editions are very voluminous and consequently lack handiness, and it is only a partial remedy of this disadvantage if one divides the single volumes, because thereby the number of volumes is multiplied and the difficulty of finding certain matter sought for is increased. By distributing different classes of matter among several separately edited pamphlets the usefulness of these publications is increased in Germany and England.

Of the publications of the three countries the German is the most complete. The Patentblatt and the appended list contain abridgments of all German patent specifications and the titles of all applications published for opposition; also all registered Gebrauchsmuster and granted patents, and finally a list of patents become void and of annulments. The Warenzeichenblatt contains all registered trade-marks, with all dates, a reproduction of the trade-marks and the list of the goods for which it is protected, in full. The Blatt für Patent-Muster- und Zeichenwesen contains official publications on general subjects and a large number of decisions of the patent office and the law courts concerning patents, designs, and trade-marks. Moreover, the publication is not limited to German decisions; it also contains the most important decisions of foreign countries, more especially of Austria, England, and the United States. In it are also regularly published official translations of foreign new laws and rules and of international agreements referring to industrial and commercial law.

With regard to the publication of patent applications and of granted and canceled patent and trade-mark rights, the Official Gazette and Journal are as complete as the corresponding German publication. Besides, the American official journal has the advantage that, with the abridgments of patents, it invariably publishes at least one figure of the drawing, if a drawing is appended to the patent specification. In Germany sometimes no figure is reproduced, even in cases in which the patent contains a drawing.

But the contents of the German Blatt für Patent-Muster- und Zeichenwesen are considerably more comprehensive than the corresponding parts of the English and American journals. Besides the necessary official publications, the Official Gazette also contains decisions of the United States courts and likewise new laws and rules issued in the United States. But foreign decisions and foreign law is completely absent and the same holds of the English Official Journal.

Thus, for the purpose for which these publications are issued, I believe it may be held that the German publications are the most efficient, because they are conven-

iently separated into a number of parallel editions, and at the same time their contents are most comprehensive.

The English and American official journals are equivalent as far as their contents are concerned. But the English publication is rendered more useful by its superior arrangement in a number of separate parallel pamphlets.

ON THE EFFECTS, EITHER BENEFICIAL OR DETRIMENTAL, OF THE GERMAN SYSTEM OF ANNUAL TAXES ON PATENTS, AND IN THE SMALL FEES CHARGED FOR EXAMINATION AND ISSUE OF PATENTS.

The legislators' object in instituting a system of quickly increasing annual taxes charged for the maintenance of patents has been to diminish as much as possible the number of useless patents. The idea is that a patent which does not produce a revenue easily exceeding an annual taxation reaching the amount of a few hundred marks had better be abolished, because it brings the owner no income and possibly stands in the way of other inventors who otherwise might bring about a further development and progress in the art.

It may certainly be held that, as has been set forth with regard to the expectations attached to the working clause, this theory individualizes patents too much. Cases could certainly be multiplied in which numerous patents forming members of groups of small improvements of some machine or technical system produce absolutely no revenue individually, but, cooperating in a group, form very valuable property. However, also in that case it is a matter of calculation whether it pays the owner better to bear the annual taxes than to abandon his rights. The competitors are certainly benefited by the early abandonment of as large a percentage of granted patents as possible, and therefore the institution of progressive taxes; while it diminishes by a certain amount the value of German patents considered as an investment, on the other hand, it benefits the public. The question to be answered would be where the line is to be drawn between prohibitory taxation and no taxes at all. The sum total of German taxes over the entire legal life term of a patent amounts to over 5,000 marks, and thus these taxes are the highest charged anywhere in the world for the maintenance of patents. I do not believe that an at all appreciable number of patents is ever abandoned as long as any kind of revenue can be clearly traced to the patent. The owner will usually have to expend so much larger amounts for developing his invention, either technically or commercially, that the increase of expenses imposed by taxation is hardly felt.

The statistics of the English and German patent offices show that at the end of 1910 only 3 per cent of English patents granted in 1896 were still in force and more than 10 per cent of German patents, though in Germany the total of annual taxes is more than double the amount of the English total. This illustrates the proposition that the effect of this kind of taxation is certainly not proportional to its amount.

Thus I believe that the dividing line between a system without any taxation, like that of the United States, and a system comprising taxation must be drawn at a quite low figure. If patentees are taxed at all they will abandon all patents for invention which they have found to be useless and the number of coexisting patents will be correspondingly diminished. On the other hand, if the patentee believes that there is still a shadow of a hope that his patent can be developed into a paying investment, he will not abandon it, even if the taxation is comparatively high. It would follow that the object of reducing the number of coexisting patents is obtained by low taxation as well as by high taxation and, therefore, irrespective of the question whether a large number of coexisting patents are an advantage or a disadvantage to the country, high taxation may be safely considered as a disadvantage.

The German patent office usually pays into the imperial exchequer a sum of more than 5,000,000 marks, after all the expenses of the office have been deducted, and this large profit is mainly, if not entirely, derived from the annual taxes charged

for the maintenance of patents. If it is considered just that the persons seeking the protection of patents for their inventions shall also maintain the patent office, it certainly can not be considered just that they are taxed besides. Where the revenue derived from taxation exceeds the cost of maintenance of the patent office, its only justification would be the suppression of superfluous patents, and if this object could as well be obtained by lower taxation the excess must be considered as a detriment to the country, inasmuch as this money, left in the pockets of inventors, would probably be employed to develop and improve the arts and would thereby more effectively and lastingly benefit the community than if expended for Government purposes, in which the body of inventors has no more personal interest than other members of the community.

If the taxation of patentees is considered from the point of view of a proper maintenance of the patent office, it may be held that from similar considerations of justice the initial and filing fees, which represent a recompensation of services actually rendered to those persons who pay them, should be sufficient to cover the expenses of the office. The annual taxes paid for maintaining granted patents are not balanced by any services rendered by the office.

According to the German law, however, this is not the case. The very low initial fee of 20 marks, and the final fee of 30 marks which is only paid when the patent is allowed, though patents finally rejected usually cause the office much more trouble, are not by far an adequate recompensation for the amount of labor expended in examination and litigation.

That these fees are fixed at so low a figure is rather likewise an expression of an intentional policy which aims at rendering the filing of patents as easy as possible and more especially of putting patents within the reach of persons of small means. This intention is certainly good, and, in spite of the theoretical injustice of taxing a part of the inventors to benefit another part, I believe the institution is, on the whole, beneficial. But the benefits derived therefrom must not be looked for in any marked effect upon statistics or results apparent in the commercial well-being of the country. I am convinced that by increasing the initial fees to an amount adequate to pay the expenses of the office, as in the United States, the actual number of annual applications would not be appreciably reduced. That the number of patent applications filed annually by a given number of inhabitants depends on various other considerations is, to my mind, satisfactorily proved by the fact that in the United States this figure is considerably higher than in Germany, though there are many indications tending to show that the native talent for invention of the population of the United States does not attain a higher standard than that of Germany.

The benefit of low initial fees rather resides in the moral effect that may be attributed to this measure, in preventing the development of a feeling that patents are reserved for the prosperous.

To resume, annual taxes probably have little or no actual influence on the commercial prosperity of the community. The country using them may be compared to a man who carefully removes the dead leaves from his garden. He may obtain a negligible profit and in appearance his garden will be much more tidy, but he will hardly reap more crops than the man who allows the leaves to rot where they fall and instead gives more attention to the fruit trees.

ON THE DEFECTS IN THE PATENT LAW OF GERMANY AND IN THE PROCEDURE OF ITS PATENT OFFICE, WITH SUGGESTIONS OF CHANGES THAT WOULD BENEFIT INVENTORS AND THE PUBLIC.

The most prominent defect of the German patent practice is in part a consequence of the law and in part of the procedure. It is a quite useless and unnecessary slowness and complication in the work of examination. Every application is first passed to an examiner, and if the applicant is not incapable of handling his case in the

great majority of cases he will come to an understanding with the examiner within a time of one to six months. There the work might end. But after the examiner has pronounced that the case is in form for allowance, he passes the file to a referee, who reports upon it to the board of examiners, a board of three, and the board pronounces the preliminary allowance. The application is then laid open to opposition, of which hereinafter.

This arrangement was originally devised as a check on examiners, whose preliminary verdict thus has to undergo the criticism of his colleagues. But in the practice of to-day the number of applications has increased to such an extent that the voting of the board on the examiner's decision has become a mere form. It is easy to calculate from the official publications that in ordinary meetings of the board there are not more than two to five minutes allowed on an average for every case, and it stands to reason that so short a time is barely sufficient to conform to the formalities prescribed by the law, and that it is out of the question that intelligent work is possible. The result is that whatever the examiner recommends is accepted by the board, and the system merely acts to burden the officials and diminish their efficiency.

The remedy is obvious. The authority to pronounce preliminary allowance should be given to the examiner, and only in case the applicant fails to arrive at an agreement with him should he be obliged to appeal to the board. As far as the letter of the law is concerned the change would be very slight and the result would be twofold. The work of the officials would be considerably reduced, and in cases in which appeal was taken to the board the latter would be enabled to investigate the case intelligently and to form an independent opinion on its merits.

The titles of all cases laid open for opposition are published in the official periodicals and one copy of the written specification is laid open for inspection in the reading room of the office for two months. When this time has passed without leading to opposition, the case is returned to the board of examiners and is once more voted upon and thus finally allowed if no member produces further references.

This arrangement causes another very serious delay and, though the amount of work added to the duties of the patent office is not considerable, the work thus forced upon inventors is great and the efficiency of the institution considerably diminished. Since the applications can only be inspected in the patent office in Berlin, all persons not resident in the capital must make use of the services of agents if they desire to keep track of the progress in any branch of the art. Their agents keep them continuously informed of all applications laid open and, judging from the titles which are communicated to them, they order extracts from such applications which they believe may concern their interests. Since this system, which has gradually become the universal practice, requires some correspondence, and agents require considerable time to copy the applications that are ordered, it may be assumed that three weeks to one month of the two are consumed by the preparatory work before the interested party can begin to consider whether he desires to oppose or not.

Though only 5 to 6 per cent of applications are opposed, and only about 30 per cent of these oppositions lead to rejections or amendment of claims, I do not believe that it would be good policy to abolish the system of publication and opposition altogether. The reasons for this opinion are discussed in an earlier part of this paper. But one somewhat irrational feature is attached to the system which might easily be remedied by a change of the law.

Examination is concerned with printed publications only. Therefore the office does not consider itself authorized to print applications before final allowance. Thus they are practically made public and must be made public, but nevertheless in view of the law are not public.

I believe the English system is superior and if adopted in Germany would result in a very great saving of labor. As soon as an application was preliminarily allowed

by the primary examiner it should be passed to the printer. The specifications thus produced should be sold cheaply to every person interested, and after the lapse of a certain time, which, in that case, might possibly be less than two months, the patent should come into force without any separate act of final allowance.

Concerning examination itself, I believe the provision of section 2 of the law to be detrimental, according to which an invention is considered as anticipated if it has been publicly used within the Empire in such manner that its use by other experts appears possible.

This clause leads to very vexatious and indefinite investigations frequently involving the examination of witnesses by provincial judges who are rarely competent to draft useful and reliable affidavits, and the decisions are correspondingly vague and unreliable.

Here a much more definite formulation of the law could be safely substituted and might be expected to result in much saving of time and disappointment. Otherwise German examination is efficient and as a rule just. But I believe the community at large would be benefited if the standard of patentability were somewhat lowered. I have discussed in a previous part of the paper that the German patent office seems to consider an increase in the number of patents more or less in the light of a danger to technical progress, whereas experience does not justify this apprehension, and seems to teach, on the contrary, that the more liberal is the treatment and the more efficient the encouragement of inventors the more is technical and consequently industrial and commercial progress assisted.

From this point of view it may be considered as a deficiency of the German law that the life term of a patent begins with the date of application. This provision results in a considerable loss of time to the inventor in all cases in which examination is protracted. The law provides that legal protection begins with the day of publication, and it may be considered a matter of justice to count the life term of the patent from the same day.

Some details of the system also seem open to just criticism. Thus, if a certain form of office letter, technically termed "Vorbescheid," is not answered by the applicant within the time fixed, and if the final fee is not paid within the two months' period of publication, the application is considered abandoned, and the law provides no means of restitution. This clause sometimes leads to the loss of valuable applications through inadvertence, and the object of educating the public to punctuality is not obtained because the office can not enforce a real answer to its objections, but must be content with a merely formal notice that the applicant upholds his application.

Concerning the maintenance of patents by increasing annual taxes, I have already expressed my opinion in a former part of this paper, that to remove the bulk of useless patents, an object which may be considered desirable, a much lower taxation would be as efficient and therefore the excess may be looked upon as an unjust taxation of eminently useful work.

I do not wish to see the system of annulment proceedings abolished. But I have already pointed out at another place that the clause prohibiting annulment after five years has been inefficient in obtaining the object sought for and detrimental in other respects. This clause therefore could be repealed with advantage.

In lawsuits for infringement of a patent it is in most cases practically impossible for the patentee to recover damages. This difficulty is more or less a direct consequence of the law which provides that damages shall only be awarded if the patent was infringed from gross negligence. An infringer will always be able to submit some kind of reasoning by which he can create the appearance that he believed his manufacture bona fide outside the scope of the patentee's claims, and the courts as a rule will follow him.

This deficiency could be avoided if the law were changed to read that damages can be awarded if it is proved that the infringer had knowledge of the existence of the

patent. The patentee can easily put him in touch of his patent before suing him, and if he neglects to warn him he can not complain of the consequences.

The working clause, even in the modified form in which it remains after the amendment of 1911, I believe to be a disadvantage to inventors and to the public and feel no hesitation in advocating its entire abolishment. My reasons for this opinion are given in another place.

In conclusion it should be mentioned that the German Government is at the present time considering an amendment of the patent law, and that parts of the reforms suggested in this paper are actually on the program.

ON DEFECTS IN THE PATENT LAW AND PATENT OFFICE PROCEDURE IN ENGLAND AND THE UNITED STATES.

As a general defect of the procedure in the English patent office I believe I am justified in designating the strong inclination to overstretch formalism. The difficulties encountered and the formalities required in many instances, especially such in which foreign law does not in every respect conform to the English rules, appears to be quite unnecessary and the vexations thereby caused to foreign applicants can not even be said to be intentional, so as to serve any political considerations. To give an instance, the German law permits the formation of firms, in which all partners are liable for the liabilities of the firm to the extent of their entire private property, and nevertheless every partner's single signature is valid for the firm. Such firms are officially registered and can nominate other persons not partners of the firm to represent and sign for the firm either singly or jointly, and such "procurists," as they are termed, are also legally entitled to sign for the firm.

But this institution is apparently not known in England and the English patent office therefore refuses to accept the signatures of such persons, and if an application is the property of a firm of this kind requires all members of the firm to sign powers of attorney and other documents required conjointly.

In administering the provisions of the international convention also the English office requires the observance of far more useless and vexatory formalities than any other nation belonging to the convention.

The same apparently quite wanton formalism is apparent also in some parts of the law and not frequently causes similar vexations. The provision that an application shall become void if examination is not brought to an end in a twelvemonth may be considered one of these cases. The usefulness of this provision is not apparent and the difficulties caused thereby may sometimes lead to the loss of a valuable application.

Much more important objections, however, can be raised against the English system of examination. That the office is not authorized to finally reject applications which it considers anticipated may be looked upon as an advantage of the system, or, to say the least, as an interesting experiment. Taken in combination with the procedure of the law courts in treating infringements, it may be looked upon as a sufficient result of examination, if it acts to collect all the material required for deciding on the patentability of the subject matter. But, regarding this point, the system presents a large opening to criticism, in that it is only concerned with prior English patents. Logically all other forms of publication should either also be excluded from influence on patentability or else examination should be extended thereto.

The provisions regarding opposition proceedings, by which opposition is reserved to the owners of prior patents and is restricted to interference with such patents, appear inadequate from the same reason. It may be questioned whether publication before allowance for the purpose of opposition is not altogether more harmful than usual in causing unnecessary delay in a very large majority of cases. But if one once goes to the trouble and expense of making every application pass this test, I should

say that the usefulness of the institution would be considerably increased if the opportunity of opposition were extended to all persons interested and if as legal reasons for opposition any anticipation of the invention were admitted. If it is preferred to reserve all questions of limitation or rejection to the ordinary law courts, the effect of successful opposition for lack of novelty might be limited to a publication of previous disclosures as the effect of official examination is limited by the present law.

My position toward compulsory working is discussed in another part of this paper. But here a provision or rather an interpretation of the English law quite peculiar to England should be mentioned. The law admits revocation of a patent if the patented article is mainly or exclusively manufactured abroad and, according to the decisions of the English courts, this provision is interpreted as referring not only to the supply of the English market but to the total supply in any other country. Thus, if a patentee establishes workshops in every country of the world and supplies the demand of every single country from its own shop, his British patent is nevertheless liable to revocation, if the English demand for the article is only a small percentage of the world's demand, though the entire English demand is being supplied from an English shop.

Even the most devoted admirer of compulsory working can only justify such an interpretation by admitting as legitimate a tendency to exclude foreigners as much as possible from the benefit of English patent protection.

A certain remnant of injustice toward aliens is also recognizable in the patent law of the United States, though it may be doubted whether anything of the kind is at all intended.

Thus the provision that the specification forming part of every application must be sworn to in the presence of a United States consul creates a probably quite useless annoyance and in many cases a serious disadvantage to foreigners, especially inhabitants of the continent of Europe. The detailed development of quite definite forms of language in drafting specifications and claims is in my opinion on the whole an advantage of the American system of examination. But one consequence of this formalism is, that it is almost always impossible for a foreigner to procure in his own country competent advice on the best form of presenting an invention to the United States office. Though the liberality of the office in admitting amendments during examination leaves little to be desired, in some cases the applicant can encounter serious difficulties if his original application papers were not adequately prepared. But the provision compelling him to sign the individual papers in the presence of the consul prevents his getting them prepared by an American expert, unless he chooses to risk the considerable loss of time caused by having them returned for signature. Thus, in the great majority of cases, United States applications are prepared by English solicitors who usually do little more than translate the continental specification into more or less idiomatic English, and the specification thus obtained is sworn to by the applicant. This system frequently has no more detrimental effect than to cause the United States solicitor intrusted with the handling of the case, and also the United States examiner, a large amount of unnecessary trouble. But now and then the effects are much more serious.

I have not much faith in the affirmations of foreign inventors as a means of proving the identity of the subject matter described and claimed in the specification they sign and believe that practically exactly the same end would be achieved, if the inventor were permitted to sign an affirmation referring to the title of his specification, which might be prepared later by the United States attorney.

The present system is based on the assumption of honesty on the part of the inventors, their witnesses, and attorneys and comprises hardly any safeguards whatever against dishonesty. The transaction of applying for letters patent apparently does not lend itself to dishonest operations. Otherwise experience would long since have enforced the adoption of much more strict and rigorous measures for ascertaining the identity,

especially of the person signing the affirmation. Therefore it is my belief that this vexatious system might be abandoned and that by so doing, not only would the foreign inventors be benefited, but also the United States examiners who would not be compelled to handle many inadequately prepared applications.

If the development of definite and specific forms of language in the practice of examination in the United States Patent Office has been classed as an advantage, it must also be stated that certain drawbacks are consequent thereupon and might be remedied.

Thus the rule, which is rigidly enforced by the examiner, that the language of claims shall be strictly descriptive leads to the consequence that claims for the application of a known device to an end for which its application was not known, are rejected for failing to define anything novel, though the function of the device may be entirely changed by its application to another purpose. In such cases the formalism has evidently led to mistaken rigorosity, because it is difficult to conceive any sound reason why the discovery that a device, hitherto only known to be effective in one application, is effective in another, should not be considered patentable.

Likewise the rigorous enforcement of the rule that any one patent shall only be drawn to one specific embodiment of an invention appears to have hardly any foundation in reason, because two distinct embodiments may very often be the logical consequence of a sufficiently broad inventive idea.

I understand that another rule hitherto enforced, that method and apparatus claims shall not be allowed in the same patent, has been lately superseded by jurisdiction and this shows that other more or less arbitrary rules governing examination might be revised.

In a previous part of this paper I have already pointed to the fact that the number of coexisting patents in the United States is very much larger than in England and Germany and in fact any other country in the world, and that this is due to the fact that the United States is the only country not charging any annual taxes for the maintenance of patents. Although it is my belief that the disadvantage caused by the continuance of practically useless patents is not very great, there can hardly be any doubt that to a certain degree these patents may form an obstacle to progress by other inventors. I believe that in this respect the English system is the best, by which patents are maintained in force gratis for a certain number of years and then are subjected to progressive taxation. It provides ample time for the unhindered initial development of an invention and effectively acts to remove the large number of titles, which are already practically void for want of commercial merit.

APPENDIX G.

METHODS OF EXAMINING APPLICATIONS.

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I. THE EXAMINATION OF APPLICATIONS.

The Work of the Examiner.

The files come directly to the principal examiner's desk each morning and before they are recorded in his division.

The principal examiner goes over the papers to ascertain if the case belongs to his division. If he is of the opinion that the case has been inaccurately assigned to him, he can return it to the Application Division at once, or he may consult the examiner in charge of another division to which he thinks it belongs. In case of a transfer the file is returned to the application room in order that the "charge" to the division may be corrected on the record book there, and it is then forwarded to the new examining division indicated.

If the principal examiners can not agree as to the particular division for the case in question, the file is sent to the Classification Division for a final decision as to its proper assignment.

The principal examiner assigns the case to one of his assistant examiners by indicating in pencil on a corner of the wrapper the name of the assistant or he indicates the subclassification which itself indicates the particular assistant by whom the case is to be handled.

The force of assistant examiners is divided so that each particular assistant examines certain classes and subclasses.

As soon as the principal examiner has indicated to whom the case is assigned the file is taken directly to a clerk, who enters the record in a book as follows:

The serial number is entered first, then the number of the case received for that particular month, the name of the applicant, attorney's name, the invention, date application arrived in Patent Office, date of receipt in examiner's room, number of drawings accompanying the case, initials of the assistant examiner to whom the case goes, date of first action, and dates of subsequent actions and proceedings.

The file is now put on the assistant examiner's desk, and all subsequent actions that are taken are noted in black and red ink on the clerk's record book and also on the file, indicating incoming and outgoing communications, respectively.

The clerk in the division indicates on the papers all amendments or changes from the original application as the different amendments come in: the amendment itself is attached to the original application.

The actions affecting the case are noted in ink on the outside, middle, and right hand flap of jacket.

The drawing in the case is not kept with jacket, but is put in a drawer, from which it can be taken when desired by the examiner, reference marks indicating its location.

In the upper right hand of the drawings is stamped the division to which the case belongs, also is written in red ink the serial number of the application, as taken from the jacket; the register book number is written on the right-hand margin of the drawing; then in pencil is noted the subclass to which the assistant examiner has decided the case belongs; the classification to which the case has been assigned is stamped on the drawing.

When the jacket originally reaches the examiner, the application, specifications, etc., are found fastened within the middle fold, and subsequent amendments are kept here, while in the inside of the right-hand flap of the jacket is fastened all later correspondence relating to the case.

When a letter comes in calling for a correction on the drawing, the drawing is sent to the Draftsmen's Division, and sometimes the file accompanies it; a proper record is kept in order to locate the same. The Draftsmen's Division returns it to the examiner with his notations. This correction or modification of drawing is classed as an amendment.

Inquiries as to the status of cases are received in the Examiner's Division from the chief clerk's office, and information is furnished the chief clerk.

The jacket (about 9 by 14 inches after folding), which is used in all applications for patents, is folded and printed as follows:

First fold, blank.

Second fold:

Div. ....., 1912. (Ex'r's book).....

Number (Series of 1900).

..... Patent No. .....

Name.....

.....

of.....

County of.....

State of.....

Invention.....

Parts of application filed.

Original.	Renewed.
Petition....., 191..	....., 191..
Affidavit....., 191..	....., 191..
Specification....., 191..	....., 191..
Drawing....., 191..	....., 191..
Model or specimen....., 191..	....., 191..
First fee cash....., 191..	....., 191..
" " cert....., 191..	....., 191..
Appl. filed complete....., 191..	....., 191..
Examined.....	.....
Allowed.....	.....
For Commissioner.	For Commissioner.
Notice of allowance....., 191..	....., 191..
Final fee cash....., 191..	....., 191..
" " cert....., 191..	....., 191..
Patented....., 191..	....., 191..

Division of App., No....., filed.....

Attorney.....

Associate attorney.....

(No. of claims allowed.....) Title as allowed.....

.....

Third fold:

1912.

Contents.

Print.....	
1. Application.....papers.	26. .....
2.	27. .....
* * *	* * *
24.	49. .....
25.	50. .....

When an assistant examiner reaches a case assigned to him, which may be a month from the time it is received in the division, he reads it over in order to thoroughly understand it and to make certain that only one invention is described and claimed. If there is more than one, the applicant must cut down the case so as to include but

one invention in the particular application. After he thoroughly understands the case and has seen that it is limited to one invention, he reads the papers over to look for informalities. He examines first the petition, which is merely a request for the grant of a patent and contains the name of the inventor, of what country he is a citizen, where he resides, his post-office address, etc. Following this is a power of attorney, the applicant usually appointing an attorney to prosecute the case. He next reads over the oath of invention. An applicant makes oath as to certain facts in regard to the invention, which facts are determined by the patent statutes and by rules of the office as to the averments. The examiner also determines whether or not the application has been filed within a reasonable time after its execution, and if it has not been filed within a reasonable time, a new oath is called for, there being a decision of the Commissioner of Patents which holds that if the application has not been filed within the period of three weeks from the time of the execution thereof a new oath should be required, allowance being made for time in transit. Any informalities found in the petition, power of attorney, and oath are noted and corrections called for in the action of the office on the application.

The assistant now studies the description of the invention contained in the specifications. He takes up the description in connection with the drawing—assuming that the invention can be illustrated by drawing—reads the specification in connection with the drawing and notes any inaccuracies, defects, or omissions; and if the specification is not clear and the language used is not accurate he makes notes of these facts, also as to whether or not the proper reference characters are applied in the specification, whether there is a correspondence between the specification and the drawing as to the use of reference characters. There is usually a general statement of the character and scope of the invention, followed by what is called a brief description of the figures of the drawing, and this is carefully read to ascertain whether or not these figures are properly described. Following this in the specification is what is called a detailed description of the construction of the machine, referring to the different parts by reference characters. This, in turn, must be all gone over very carefully.

The examiner finally comes to the claims. The claims in the patent case are the important part of the grant.

The examiner reads these claims, studies them thoroughly, so as to fix in his mind the construction which the applicant regards as new and patentable, and after that he proceeds to make his search—and this is the important work of his office.

The examiner first goes to the class of inventions of domestic patents and looks through that; that is, the nearest class to the invention claimed. Say, for instance, the application in hand is for an improvement on a linotype machine and is of the class that in the office classification is known as a circulating machine, it would be necessary for him to take out all of the patents in this particular subclass which are in his division. These domestic patents are arranged in their classes and filed in shoe boxes. He will look at the drawing in each of the patents in this class to see whether or not it would contain any construction which would anticipate any or all of the claims of the application. Very frequently, by looking at the drawing, he can tell whether or not it contains such a disclosure. However, there is a printed specification on the back of the drawing, and, if necessary, he can read that to see whether or not there is any doubt as to the construction. If the patent has any bearing on the claims he will lay it aside. In this way he goes through all the patents in the class of circulating machines and lays aside all those patents which he thinks have any bearing whatever on the claim, and in this particular case he would have about 15 different shoe boxes containing patents in this class. It may be that the claims are of such character that it will be necessary for him to search other places in this division or in other divisions of the Patent Office. His completeness of search in various other classes of invention will depend first upon his own knowledge of the arts that are in the office, and second,

upon information and instructions given him by the principal examiner himself. Take, for instance, the case we are describing above, which will be found in division 17 of the Patent Office—in division 3 will be found patents for machines for casting single type which, in a broad sense, are analogous to machines of the linotype circulating class, and it may occur to the examiner that several other divisions in the office will also contain classes which it is necessary he should search, but it is only from his knowledge which he has collected through years of experience in the office that he is able to prosecute his search more thoroughly and deeply in analogous arts in other divisions than would be the examiner of less experience. When a new man comes into a division the principal examiner has to instruct him where it will be necessary for him to search for references to anticipate claims.

After the examiner has completed his search of the United States patents, he makes a search through the foreign patents. In each examiner's division, and pertaining to the classes therein, are found copies of patents issued by England, Germany, France, Austria, and in fact a great many of the foreign Governments, probably more English, German, and French patents than those of any other country. The drawings and specifications in all of these foreign patents are kept separately. The drawings are filed in portfolios, in some divisions classified according to the country and subject classified under each country, and in other divisions all classes pertaining to one thing may be found in one portfolio, no attempt being made to classify by country. The specifications pertaining to each drawing are kept in boxes arranged according to the country to which they pertain and in the order of their calendar years. The examiner is usually able to tell by study of the drawings whether or not a claim is anticipated. The drawing will contain a date and number corresponding to the date and number of the specification.

In most mechanical cases it seems to be the general practice that should the examiner find what he considers a sufficient number of references for the case in domestic and foreign patents, he seldom has occasion to make a search in the publications. However, failing to find a reference in patents already issued here or abroad, it is also his duty to make, as far as possible, a study of publications to attempt to find a reference for the case in hand. The several divisions of the office have small reference libraries to assist in this work, experience having taught the examiner the different publications more apt to meet his particular cases. If a search of the miscellaneous volumes in his division discloses nothing, the examiner will go first to some other division in the office where he thinks he may find a reference in the publication, or he will go to the scientific library of the Patent Office. In some cases, he may go to one of the various libraries of the different departments of the Government, should he believe that he can readily find the class in which he desires to make a search, or he may go to the Congressional Library.

Divisions handling cases relating to electrochemistry compositions, recipes, processes, and similar arts have occasion to search publications for references in a great proportion of cases. In this connection some of the divisions have made extracts of various things found in a number of years past and the force is constantly adding new extracts to their files, which are classified and arranged with the copies of patents in the shoe boxes. An examiner searching in one of these classes, after exhausting all of the files in his own division or any other division, will go to the scientific library of the Patent Office. This library contains many scientific works. The books are classified and arranged on shelving and the index of the books is attached to each, but the subject matter is not digested and it is necessary in case of searching for reference to take each volume separately and run through its individual index to ascertain whether or not the book contains a reference to the subject in mind. Here, also, are found various magazines pertaining to the different classes of industries, and it is not going far astray to state that an attempt to make a thorough and conscientious examination through the various volumes would be a long and prob-

ably a fruitless task. The memory is probably a tremendous factor when a search is made through publications. An adequate digesting, classifying, and indexing of the publications in the Patent Office to facilitate a search for references in patent cases would be a large task.

Each division has a set of foreign and domestic patents pertaining to itself, and to facilitate the search for references in patent cases these are classified into groups and subclassified under each group in accordance with the plans arranged by the Classification Division in quite a number of instances; but in other instances the same classification that has been in use in the Patent Office for a long number of years still obtains. The assistant examiner notes, in pencil, on the margin of the application the various references found, and after assembling these he brings the case personally to the principal examiner and explains and points out the construction and tells what he thinks the invention is. Also, if he thinks certain claims are anticipated by patents; he states his idea as to combining references on points involved and the two together reach a decision as to the action to be taken in the case, first agreeing on all of the informal points raised, and then acting on all of the merits. Action on merits is not necessary, when division is required. In nearly all cases before an application is passed to issue it is necessary that some minor or major correction alteration, or change be made, not only in the body of the specifications, but more particularly in the set of claims. Great care and technical knowledge are required to properly draw the same and, consequently, great pains and a great deal more than ordinary intelligence are required to properly examine, criticize, and, may be, pass the same through to issue. The assistant examiner prepares the letter, acting on the case along the lines agreed upon, for the signature of the principal examiner.

After an examiner has decided to reject an applicant's claim on the ground of nonpatentability because of various reasons stated, in most cases because of references cited showing in the examiner's opinion the points at issue in previously granted domestic or foreign patents or publications, the applicant has the right to ask a reconsideration on the disputed points. He points out in particular where he thinks the examiner is in error, and, of course, what the applicant or his attorney shows may throw a new light on the subject and cause additional search for references in the division to be made, with perhaps the probable result of new references being found and cited. If, after the applicant has filed an argument as to the claim or claims in dispute, the examiner is of the opinion that the claim should not be allowed, the claim is "finally rejected." If the claim is amended in order to avoid the references cited and the examiner is of the opinion that the amendment is immaterial, he rejects the claim. If, however, the amendment is considered by him to be a material one it is given further consideration.

After the principal examiner has thoroughly considered the case, and the claims are found to be allowable over the prior act, including domestic and foreign patents and prior publications, if no interference is found to exist the examiner is ready to allow the case and does so by signing the jacket on its second fold:

Examiner: (Name and date)

and the necessary entries are made in the record books of the division. The jacket is forwarded to the Issue and Gazette Division from which all necessary data are entered in the record books, the drawing remaining in the division until final fee is paid and it is then taken out and prepared for patent.

The assistant examiner marks on the lower hand of the jacket the title of the case as allowed, which is the classification to which it belongs.

There is also noted on the jacket the number of claims allowed, the date on which the case was allowed, and also marked on the margin of the drawing the figure of the drawing which is to appear in the Official Gazette.

Making an Issue Search.

This is a search which is made through pending applications in the same class of invention, to determine whether or not there is any probable interference, that is to say, whether any other inventor has an application pending in which he has claimed what is practically the same invention, which would result in what is called an interference.

Having made a search through the pending applications, which are found in pigeonholes of cases in the room and on the various desks, the assistant examiner then makes a search through cases that have been allowed and sent to the issue division to determine whether or not interference properly exists.

If the principal examiner thinks claims are not patentable, he writes a letter finally rejecting the same. This action is a closing of the prosecution of the case before the principal examiner. The applicant or his attorney is not entitled to amend except under certain conditions. The applicant may take an appeal from the final rejection to the board of examiners in chief. This is sent to the principal examiner, and he states his reasons for the final rejection. A copy of that statement is placed on the file and another copy is sent to the applicant or his attorney. The case is sent by the principal examiner to the board of examiners in chief through the docket clerk and the date fixed for a hearing before the board, where the applicant or his attorney may appear and argue the case orally if he wants to. The examiners in chief will render a decision either affirming the action of the examiner or reversing it. If the board approves or affirms the principal examiner, the case is sent back to his division with a copy of the decision and the case is put in a pigeonhole. The applicant is entitled to take a further appeal to the commissioner if he wants to. This calls for no other action or statement on the part of the principal examiner. The docket clerk comes up and gets the file and takes it down to the docket room. The case goes to the commissioner on the record as it stands, and there follows the same procedure as to hearing and decision.

The examiner might discover some new reference or reason for rejection and the procedure in the case of that kind is to put in afterwards his answer containing this new reference or reason, and also notifies the applicant, and the applicant can go ahead with this new reference or he can ask that the appeal be withdrawn.

Petitions in certain matters go to the commissioner.

When a man takes a petition from the action of the examiner it is much like an appeal. It is sent to the principal examiner for statements, as in an appeal case. The examiner makes a statement and forwards his file, with the copy of his statement, to the commissioner through the docket clerk, and sends a copy of his statement to the applicant or his attorney. There is usually a hearing on these petitions, or most of them, if they are of special importance, and the commissioner will render a decision sustaining the examiner or granting the petition and then the case comes back to the principal examiner.

There is no appeal to any higher tribunal in case of a petition.

After a case has been allowed the applicant or his attorney has six months in which to pay the final fee in order to take out his patent. In case he fails to do that the case becomes a forfeited case, that is to say, it is placed in the forfeited file for the time being and it is a dead case. At any time within two years from the allowance of that case the application may be renewed by paying a new application fee of $15 and a petition for renewal and it becomes a new case and is subject to reexamination by the examiner just the same as if it were a new case. Of course, if there has been no change in the case when it has been renewed the action will be largely formal, after making issue search, etc.

The complete file is put in the principal examiner's desk and after looking over the same he signs his name on the jacket, and the file and drawing are sent to the Issue

Division. The Issue Division looks over the case to see if there are any informalities which would fall in its particular division which the examiner has overlooked. Maybe, for instance, there has been some little omission which the examiner has not caught, and the Issue Division sends it back for correction. If the case is found to be all right in every respect, the Issue Division sends out what is called a notice of allowance.

The Issuing of the Patent.

After an application for patent has met with the approval of the principal examiner the file is forwarded to the Issue and Gazette Division. Here, after recording, the first step is a review of the case as approved by the principal examiner. Revisers look over the entire file to note any informalities, errors, omissions, discrepancies, etc., and if any are found the case is returned to the Examiner's Division for correction. These references also include an inspection of the drawings; after which the drawing is sent to the Examiner's Division in order that notations from the same may be entered in the record. The notice of allowance is sent out from this division and the applicant is given six months from date of allowance within which to pay the final fee. If the fee is not paid within that time the case is sent to the "forfeited file" in Division E.

After the case is marked "allowed" it is filed in self-indexing order on shelving around the walls of this division, there to await receipt of final fee. Entry of receipt of this fee is made in a book and also on the jacket. Receipt for the final fee is sent out from this division. This fee having been paid, the case is now given its patent number and is registered on index cards—one original and two carbons—for the Gazette, the Government Printing Office; the office copy, which has the name of the attorney in the case entered thereon; and one carbon for the Assignment Division.

The case is now ready to be assembled with the drawing, which latter has been received back from the Examiners' Division.

The file and drawing are sent to the branch printing office (within the building) where the heading is printed on the drawing; a copy of heading is struck at the same time on a slip of paper to be retained with the jacket. The drawing is now forwarded to Division E to be lithographed—the file goes to the Government Printing Office where all the printing of the patent is done. A record is kept citing the transmittal of jacket and drawing. As soon as possible proof sheets of the drawing are sent to the Government Printing Office to inform them that the drawing has been printed; then the drawing is sent from this division to the "cut" maker, who makes the cut for the Official Gazette.

Proofs of the specifications are read at the Government Printing Office by galley, and the page proof is sent here where any inquiries are run down and answered.

When the printed copies of the patent are received they are carefully revised and inspected, the printed patent and the lithograph of drawing are eyeleted into the "head" of the patent, then ribboned and "sealed."

The patent now goes to the Commissioner of Patents for his signature. The seal is impressed on the paper usually by a messenger in the chief clerk's office.

The patent is returned and mailed from this division.

The jacket and drawing are now sent to the "patent files," Division E.

After the final fee is paid is requires four weeks to issue the patent.

Draftsmen's Division.

All drawings received in the Patent Office are sent to the Draftsmen's Division from the Mail and File Division. In the Draftsmen's Division the drawing goes through a critical examination, and if everything on the face of it is found to be satisfactory it is marked A. F. E.—accepted for examination—and this notation holds good until the drawing may later be corrected for any reason on instructions from the Examiners' Division.

A drawing can only be taken from the Patent Office during an examination of the case pending allowance of patent in case it needs a signature or for the correction of a signature. If it becomes necessary to return a drawing to the applicant a book record of the fact is kept as well as recording the same on the jacket.

All letters received in the office with reference to drawings are sent to the Draftsmen's Division.

When an informality is found the applicant is notified of this fact. The applicant follows this notice up with a request as to the cost of making the corrections required, after which he sends on the amount, and the drawing is corrected in the office. A record of the work is entered on a book and credited to a certain draftsman. Each draftsman has a pass book and enters the fee which is received for that work.

The examiner states in his first action on the case what informalities are found in the drawing, then the drawing is sent to the Draftsmen's Division for correction on request. The corrections are made after the fee has been received, and then the applicant is notified that the drawing is all right.

Drawings for trade-marks, designs, and patents come to this division. Questions relating to drawings are forwarded to this division.

In case an attorney or applicant wishes to substitute a new for the original drawings the request to substitute is refused if the original drawing can be corrected. This has the effect of preventing an accumulation of papers in the office.

There are from 40 to 60 letters and circulars daily in this division giving estimates and answering various questions with reference to drawings.

The fees for correcting drawings are mostly received from attorneys and applicants out of Washington, and it is claimed that these fees make the division self-supporting.

A separate room is maintained for the accommodation of attorneys and their draftsmen who desire to make their own corrections.

A weekly report is make to the chief clerk of the Patent Office as to the amount of work accomplished by each man, together with a statement of the finances.

INTERFERENCES.

When the examiner finds that two or more applicants are claiming substantially the same invention, he selects a claim or claims from one of the applicants which he thinks best describes the subject matter common to all of the applicants and he suggests this claim to the applicants, so that all make the same claim, giving them 20 days to make the claim. If they refuse to make the claim as suggested within the time given, they will be held to have disclaimed the invention, and they can never claim it thereafter. If, however, all of them make the claim, an interference is declared. This interference is declared by the principal examiner by writing a letter to the examiner of interferences and giving him the names of the parties in an interference arranged in their order of dates of filing, stating the claim or claims involved and certain other data. That is a formal proceeding to determine the question of priority of invention. The claims constitute the issue of the interference. The statement is typewritten, and copies are sent to the applicants or their attorneys, and, also, a letter is written to the examiner of interferences, and he sets a time in which the parties must file preliminary statements. With the writing of these letters the jurisdiction of the principal examiner ceases, and the examiner of interferences takes charge of the interference. There is a blank in this notice which requires the parties to file in a certain specified time a preliminary statement and the statement must be under oath as to the date when they conceived the invention, when they first thought about it, when they disclosed it to other people, when they made drawings of it, if they ever made a machine or embodied the invention in construction, and any other statements of that kind. Then after these statements have been filed and approved by the examiner of interferences they are open to the inspection of the opposing parties and the opposing parties may make what is called motions

for dissolution within a specified time, say 20 days, after these preliminary statements have been opened and approved. A motion for dissolution of interference is a proceeding which may take the form of alleging that the invention is not patentable; the party making the motion may also say that these claims ought not to have been allowed in view of certain patents or for certain reasons, or they may allege that the claims do not mean the same thing when read on the application of the two parties, or that one party or the other does not have the right to make the claims, that is to say, his construction will not support them. Now if a motion of that kind is made and it is in proper form it will be transmitted by the examiner of interferences to the principal examiner who declared the interference for the purpose of determining that motion. The principal examiner will set a date for a hearing, usually two or three weeks or a month ahead, and the parties may appear before the principal examiner at that time either in person or by their attorneys and they will argue the motion over again, and after the motion has been argued they sometimes file briefs. The examiner will determine that motion and will decide whether or not to grant it or deny it. He may grant it in part or he may grant it on all grounds or deny it on all grounds. From his decision appeal may lie to the examiners in chief, or appeal may lie to the commissioner.

If it should happen that one of these cases which is found to interfere is an allowed case but has not been patented, it is necessary to withdraw that case from issue for the purpose of interference. That is done by the examiner writing a letter to the commissioner, stating the facts and requesting that the case be withdrawn from issue. In suggesting claims it is not necessary to withdraw the case from issue. A letter may be written even though the case is in issue, suggesting claims for interference, and that letter must be given to the commissioner for his approval. But the case is finally decided whether it should be or should not be dissolved. If it is dissolved the applications are again taken up for action, that is, each one is acted on separately. If it is not dissolved the case goes back to the examiner of interferences and testimony is taken in the usual way upon the question as to who is the first inventor and the examiner of interferences decides from the testimony who is the first inventor. Appeal may be taken from his decision to the board, to the commissioner, and to the court. After the decision as to which one is the first inventor becomes final the case is referred back to the principal examiner and he then finally rejects all the claims of the defeated parties that are readable on the disclosures of the successful party, and passes the application to issue of the successful party, if it was in condition for allowance when the interference was declared.

Appeals to the Board of Examiners in Chief.

After the principal examiner has finally rejected the claim or claims the applicant may appeal. His only appeal is from the examiner to the board of examiners in chief.

The applicant files a paper in which he makes the statement that he appeals from the action of the principal examiner in finally rejecting his claim. This appeal is forwarded to the docket clerk who dockets the same. The docket clerk sends the appeal to the principal examiner and he is required to answer the appeal within a certain time, usually four or five days. The examiner then gives his reasons in writing for his action in the case, and this paper is entitled "Examiner's answer." As the board of examiners in chief will want to have all the data in convenient form for reference, etc., the usual form employed is a paper reciting that this is an appeal from the examiner's final rejection of the following claim: (For the convenience of the board the claims are copied.) Then follow his references. (All are clearly and conveniently cited so that they will be easy to obtain.)

After this there is no special form. The examiner simply gives his reason why he rejected the claim, why he thinks the reference meets the claim. Of course in these

appeals there is usually a difference of opinion between the principal examiner and the applicant as to the meaning of the claim, what construction should be put on certain words as well as the difference of opinion as to what references cited show, and nearly always the question comes up as to whether the references cited are sufficient. All questions as to modes of operation, merit of reference, etc., have to be considered.

A copy of the principal examiner's answer is sent to the applicant or his attorney, so that he can criticize it and answer it himself. Applicant addresses his answer to the board of examiners in chief. Applicants or their attorneys are allowed to appear in person before the examiners in chief and also to file briefs, if they wish to. The examiner is not present at these arguments. In ordinary cases the attorneys may be given an hour or so before the board. All papers submitted are filed.

After the principal examiner has filed his answer, it usually requires four to five months to get the case before the board of examiners in chief. After the hearing this board is usually about two weeks in handing down its opinion. The decision of the board is in writing and is placed in the file in the case. If the board decides in favor of the applicant, the examiner is bound to allow the claim or claims.

In all cases that are appealed to the board the principal examiner himself handles personally or he consults with the assistant examiner who had charge of the case.

Design Patents.

Every law pertaining to the application for patents, if it is applicable, pertains also to design patents.

An application for a design patent is received in the Mails and Files Division, forwarded to the Application Division, and, after being date perforated, numbered, etc., is sent directly to the examiner of the Trade-mark and Design Division. It receives a serial number along with all applications for mechanical patents, but when issued it receives an individual patent number. It is first placed on the principal examiner's desk, and after perusal by him is entered in the division record books. The principal examiner indicates the assistant examiner who is to handle the case. In other words, an application for a design patent travels the same route as an application for a mechanical patent. A search to ascertain the prior state of the art is conducted in exactly the same manner. In this division there are two assistant examiners who are constantly detailed to this class of work. After examining the application to ascertain whether it is correct in all matters of form, the examiner removes from the file case the boxes which contain patents that have been granted in this particular class. He further enters any division in the Patent Office which he thinks may have a class or classes in which it is proper to make a search for the case in hand. His examination is extended through a number of books, magazines, circulars, and catalogues in his own division. After exhausting these and making whatever examination he is able to in the scientific library, he may at times go out of the office and make inquiries of dealers who handle articles of an analogous class.

Should the examiner decide to reject the claims, the applicant may appeal to the board of examiners in chief, and, if he desires, from the board to the Commissioner of Patents, and to the courts.

Petitions on all questions not involving merits go directly to the Commissioner of Patents.

A design patent has reference to the ornamental or beautiful and appeals to the æsthetical emotions and is granted for the purpose of increasing ornamentations and the beautiful in articles that are put upon the market to be purchased because of their artistic beauty.

The design must be applied to the purpose for which it is claimed it is to be used, and protection is not afforded for its use in other purposes.

A large number of the original drawings in design cases are filed in the shoe boxes along with the photolithograph prints. In a number of cases attempts were made to photolithograph from these original patents, but the latter were in such condition that such attempts were in most cases unsuccessful. Consequently the handling and rehandling many times of these drawings is resulting in what will be their final destruction, and arrangement should be made to have the same copied in order that photolithographs may be taken from the copies.

The system of classification which it has been attempted to install in this division may be supposed to be along the same lines as classification is made in the mechanical divisions, but it is very badly classified, and such as it is, is more probably a gradual addition to some earlier arbitrary arrangement. The Classification Division of the Patent Office has not done any work in connection with the classifying or reclassifying of design patents.

"Interference" cases relative to design patents are conducted the same as mechanical ones.

When occasion for interference arises the applications go into interference as between themselves and not between design applications and mechanical applications.

The fee for a 3½-year term design patent is $10, for a 7-year term design patent $15, and for a 14-year term design patent $30, each payable at the time of filing of the application in the office. The work involved in a preliminary examination, amending, etc., up to the point of allowance, is the same in each case, consequently an applicant applying for a 14-year term patent will lose his fee of $30 in case the patent is denied him, whereas the applicant for a 3½-year term patent would lose but $10—his filing fee in the case. In both of these instances the same amount of labor is expended in the office.

If a design patent is taken out for a 3½-year term it can not be renewed. The term must be elected at the time the application is made.

Applications for design patents.

Calendar year ending December 31, 1905	781
Calendar year ending December 31, 1911	1,534
Calendar year ending December 31, 1912, estimated	2,000
Appeals to the board of examiners in chief in the past two calendar years	43
Examiner affirmed	21
Examiner reversed	22

II. TRADE-MARKS, PRINTS, AND LABELS.

Procedure for Registering Trade-Marks.

Applications and all papers in connection with trade marks are received in the Patent Office, recorded and forwarded to the Trade-Mark Division, and after recording in this division are assigned to several assistant examiners for action. Searches, amendments, etc., are carried on in substantially the same manner as in the case of applications for mechanical patents in the other various divisions of the Patent Office. As in other divisions, the patents are classified and held in shoe boxes in cases in the division, where they are readily accessible by the searchers.

If the application is found to be formal when received and it is decided that the mark is registrable, or after any informalities which existed when the application was filed have been corrected by amendment and a mark is decided to be registrable, the application is made up for publication. After the proper entries are made the application, which is believed to be in condition for publication, is now given to one of the assistants engaged in examining work who completely reviews the work of the assistant who has examined the application. This review is believed to be necessary because of the large number of applications which must be examined by each assistant

to keep the work as near current as possible. If no informalities are found and if there appears to be no objection to registration, the application file is dated and signed by the examiner of trade-marks opposite the caption "Examined for publication," and the mark is ready to be published in the Official Gazette, which is the second Tuesday after any Thursday on which the application is received in the Issue and Gazette Division. A notice of publication is mailed from the division to the applicant or his attorney. At the expiration of 30 days from the date of publication the application is taken up for issue and is placed on the assistant examiner's desk to be "searched for issue."

Oppositions.

Section 6 of the trade-mark act provides that any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within 30 days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section 2 of the said act. An opposition may be filed by a duly authorized attorney, but such opposition shall be null and void unless verified by the opposer within a reasonable time after such filing. The fee in this case is $10.

At the expiration of 30 days the examiner of trade-marks is required to forward the file and papers to the examiner of interferences. This he does in a formal letter, giving the necessary data to identify the opposition and the application after the issue search has been made, an opposition brief and a photograph print of the drawing have been placed in the application file, and a proper entry has been made in the examiner's register, showing that an opposition against the application has been filed.

After the filing of the opposition the examiner of trade-marks has no further jurisdiction to cite new references. He may take such action as the records show he intended to take before the opposition was filed.

The examiner of interferences on receipt of the papers notifies the applicant that an opposition against the registration of his mark has been filed, and furnishes him with the duplicate copy of the opposition which the opposer is compelled to file.

In this notice the examiner of interferences specifies the time within which the plea, demurrer, or answer must be filed by the applicant, which is 30 days from the date the notice is sent out. In this letter he also notifies the opposer within what time a replication must be filed, which is 20 days after the expiration of the date the plea, demurrer, or answer must be filed. In this notice the examiner of interferences also specifies that the rules in equity cases will be followed as far as practicable.

After the termination of the opposition proceedings the papers are returned to this division to take appropriate action on the application which is to pass the same to issue if the opposition is not sustained and to note the result if the opposition is sustained.

Issue Search.

At the expiration of 30 days the application is placed on the assistant examiner's desk to be searched for issue to ascertain if an application for the identical mark or marks so similar to cause confusion is on file. If one is found, the drawing, or a brief of the same, is placed with the application which is being searched. All references cited during the prosecution of the application which have not been specifically withdrawn are placed with the application and the examiner declares an interference, if that be the proper action; forwards the opposition if an opposition has been filed; or signs and dates the file for issue if there is no interference, and if no opposition has been filed; the file and drawing are sent to the Issue and Gazette Division to have a certificate of registration issued. This certificate is issued on the fourth Tuesday following any Thursday on which the application is received in the Issue and Gazette Division, after which the papers and the number of certificate are returned to the Trade-Mark Division and proper records made.

APPEALS.

Appeals in trade-mark cases differ from appeals in all other cases in the Patent Office in that they go directly to the Commissioner of Patents in person and not to the board of examiners in chief. Appeals may be made from the Commissioner to the Court of Appeals of the District of Columbia.

After registration of a trade-mark has been twice refused by the examiner of trade-marks, or finally refused, which last action can not be taken by him before the second refusal, an appeal may be filed as provided in the statute to the Commissioner of Patents. The fee in this case is $15.

An appeal is filed in the same manner as an application or opposition, and is sent direct from the Application Division to the docket clerk, who, after making proper entry of it, places it in the application file which he has obtained from the Trade-Mark Division, and forwards it to the examiner of trade-marks who is required within five days to give his reasons, in writing, for refusing registration in a letter addressed to the Commissioner of Patents, a duplicate of which is sent to the applicant. The original is placed in the file and forwarded to the docket clerk. The fact of the appeal is noted in the examiner's register. Under the trade-mark laws of 1870 and 1881, no appeal was provided by statute within the office or to a court, the rules, however, provided for the review of the action of the examiner upon the applicant's right to registration by petition to the commissioner without fee. The present statute, therefore, appears to be merely declaratory of the practice which existed when it was passed, the only difference being that an appeal fee is now required.

The fee for filing an appeal from the decision of the examiner of trade-marks upon a motion to dissolve an interference is $15. This appeal is filed in the same manner as ex parte appeals. It is not, however, sent by the docket clerk to the examiner of trade-marks but is entered on the appeal book to the commissioner, and on a docket calendar. Appeals are made on questions which involve the merits of the trade-mark claim.

Questions arising in the division which do not involve the merits of the trade-mark claim, such as refusal of registration of the trade-mark, requirement for revision, etc., are petitionable to the Commissioner of Patents without fee. Such a petition is filed with the docket clerk. He obtains the application to which it relates and after making a proper entry of its receipt forwards the file and petition to the Trade-Mark Division. This division makes the same record of the petition as an appeal and the same general character of report on it as of an appeal, and forwards all the papers to the docket clerk who, in turn, forwards it to the Commissioner of Patents.

INTERFERENCES.

Whenever an application is made for the registration of a trade-mark which is substantially identical with the trade-mark appropriated to goods of the same descriptive properties for which a certificate of registration has been previously issued to another, or for registration of which another has previously made application, or which so nearly resembles such trade-mark, or any known trade-mark owned and used by another as, in the opinion of the commissioner to be likely to be mistaken therefor by the public, he may declare that an interference exists as to such trade-mark, and in every case of interference or opposition to registration he shall direct the examiner in charge of interferences to determine the question of the right of registration to such trade-mark, and of the sufficiency of objections to registration, in such manner and upon such notice to those interested as the commissioner may by rules prescribe. In these cases an interference is declared at the expiration of the publication period of 30 days. An interference is not declared between a pending application and an identical or similar registered mark, unless the date of use sworn to in the application is prior to the date of registration of the registered mark.

After it is found proper to set up an interference the examiner of trade-marks makes out a blank addressed to the examiner of interferences stating that an interference exists, giving the names of the parties and other data required by the blank, and notices are also sent to the parties in interest, advising them of the action of the office.

An interference brief and a photographic copy of the drawing are placed with the application. Proper records are made, after which all papers are forwarded to the examiner of interferences, who states the date upon which the interference is officially declared and who sends appropriate letters to the several parties interested.

In conducting proceedings before the examiner of interferences various motions are in order and are usually resorted to, such as a motion to dissolve upon the ground that no interference in fact exists, or that there has been such irregularities in declaring the same as will preclude the proper determination of the question of the right of registration, or which deny the registrability of an applicant's mark; all of such motions are accompanied by a motion to transmit the same to the examiner in charge of trade-marks for his action, who fixes the day when said motions will be heard before him on the merits and gives notice thereof to all the parties.

The decision of the examiner in charge of trade-marks upon a motion for dissolution will be binding upon the examiner in charge of interferences unless reversed or modified on appeal. Unless appeal be taken within a specified time, the examiner in charge of trade-marks returns the files and papers with his decision to the examiner in charge of interferences.

Appeals in these and similar cases go directly to the Commissioner of Patents.

Upon receipt of the interference, the examiner of trade-marks notifies all the parties that a hearing upon the motion to dissolve will be held before him upon a certain date at a specified hour. After hearing arguments and considering the briefs filed the examiner of trade-marks renders a decision either dissolving the interference either to one or more or all of the parties, or refusing to dissolve it, setting a limit of time within which an appeal may be taken.

After the termination of the interference proceedings the papers are returned to the Trade-Mark Division to have appropriate action taken on the successful application, which is to pass it to issue. A proper notation is made on the application filed and on the examiner's register, showing that the unsuccessful party to an interference is held in interference proceeding not entitled to register. If a defeated party in an interference is a registrant, the fact of the unsuccessful termination of the interference is stamped on the photolithographic copies of the registered mark.

CANCELLATION.

Section 13 of the trade-mark act provides that whenever any person deemed himself injured by the registration of a trade-mark in the Patent Office he may at any time apply to the Commissioner of Patents to cancel the registration thereof. The commissioner shall refer such application to the examiner in charge of interferences, who is empowered to hear and determine this question and who shall give notice thereof to the registrant. If it appears after a hearing before the examiner that a registrant was not entitled to the use of the mark at the date of the application for the registration thereof, or that the mark is not used by the registrant, or has been abandoned and the examiner shall so decide, the commissioner shall cancel the registration. Appeal may be taken to the commissioner in person from the decision of the examiner of interferences. No fee is required for filing an application for cancellation. The application is filed with the docket clerk who places it in a file jacket and forwards it to the examiner of interferences. When the application for cancellation has been terminated by an order of the commissioner canceling the registration, or has been dismissed, all papers are sent to the Trade-Mark Division. If a registration has been canceled and entry is made on examiner's register showing this fact, all the photo-

lithographic copies of the registered certificate in that division are stamped "canceled." If the application for cancellation is dismissed an entry showing this fact is made on the examiner's register, but no notation is placed on the copies. The cancellation file is sent from the Trade-Mark Division to the Issue and Gazette Division, so that the fact of the cancellation may be published in the Official Gazette.

ABANDONMENT.

The trade-mark statute does not provide for the abandonment of an application as do the patent statutes. The rules of the Patent Office, which are made in accordance with the provisions of section 26 of the trade-mark act, however, do provide for the abandonment of an application within one year from the date of the last office action if not properly prosecuted within that time. The rules also provide that the applicant may abandon an application by filing a written declaration of abandonment. The rules further require that the prosecution to save an application from abandonment shall be responsive to the last office action; if not responsive, such prosecution shall not save the application from abandonment.

Petition may be made to the Commissioner of Patents to revive an application where it has been abandoned on a proper showing that the delay in the prosecution of the same was unavoidable. It is required, however, to file a new application in place of an abandoned one, which application must be accompanied by the required fee.

VOLUME OF BUSINESS.

The number of applications filed and marks registered from 1902 to date is shown by the following table:

Year.	Applications filed.	Marks registered.	Year.	Applications filed.	Marks registered.
1902	2,602	2,006	1908	7,685	5,191
1903	2,504	2,186	1909	7,249	4,184
1904	2,524	2,158	1910	6,843	4,239
1905	16,224	4,490	1911	7,085	4,205
1906	8,493	10,568	1912	[1] 7,404	.....
1907	7,722	7,878			

[1] Estimate based on average number filed for first 9 months.

This table shows a very heavy increase in the number of applications filed in 1905, the year when the present trade-mark law went into effect. The number of applications decreased from 1905 until 1910 and is now increasing, and will probably continue to increase gradually, due to the well-known growing interest in the subject of trade-marks. On December 31, 1904, there had been 41,797 marks registered; on December 31, 1911, this number had increased to 84,710. Marks are now being registered at the rate of between four and five thousand per year.

The field of search has more than doubled under the present trade-mark law, and the large increase in the number of registrations granted necessitates a consideration of the question of adequate number of employees for this division and adequate space and filing facilities for the records.

The work of the Trade-Mark and Design Division on the subject of trade-marks for the year ended December 31, 1911, is shown more in detail by the following summary:

New applications filed	7,085
Amendments filed	11,673
Actions:	
Letters written	13,223
Applications passed for publication	4,642

Ex parte appeals	57
Oppositions	170
Cancellations	65
Interferences	261
Number of letters written by each of the eight assistants	1,653
Monthly average	138
Number of applications passed for publication by each of the eight assistants.	580
Monthly average	48
Total monthly average for each assistant	186
Average number of applications acted on each day (26 days a month, 12 months)	7

Each assistant in addition to the above-indicated work must make the weekly issue search, return all references to their proper places, and destroy the briefs when the certificate has been issued and he has received copies.

The Congress did not, when the present trade-mark law was passed, which resulted in an enormous increase in the volume of work, provide a force to take charge of the trade-mark work. The commissioner has, since 1905, assigned from the regular corps of examiners such number as he could spare from the work of examining applications for patents to this work and has provided from the force of clerks such number as has been necessary or he could spare from the other work of the office.

The time of the examiner and the two second assistant examiners is fully taken up with the work of supervision, interviews with applicants and attorneys, writing statements in answer to appeals and petitions, declaring interferences, deciding motions in interferences cases, considering all office actions which are signed by the examiner, answering miscellaneous inquiries which come from the commissioner and chief clerk, and advising the assistants searching cases. Some of the time of the examiner and one of the second assistants and all of the time of two of the six assistant examiners of trade-marks and designs is taken up in the consideration of design applications and applications for registration of prints and labels. This leaves eight of the present force to make the search in 7,085 new cases, to draft 13,223 letters, to pass 4,642 applications which are found ready for publication, and make the issue search of all published cases.

Prints and Labels.

Applications for prints and labels take the same course in the Patent Office as all other applications, and find their way immediately to the Division of Trade-Marks and Designs. A patent, or preferably a copyright, on prints and labels designed to be used for articles of manufacture is granted by authority conferred by section 30 of the act of June 18, 1874.

The applicant files 10 copies of his print or label, together with the fee of $6, and the office renders him a certificate and registers the facts. Prints and labels are supposedly artistic creations used in trade. The assistant examiner in charge of the case makes an examination of it to see if it complies with the forms and requirements of the statutes, and if it does so conform it is signed for issue by the examiner, and the title and the name of the applicant is printed in the Official Gazette. When the certificate is issued there is attached to it one of the 10 copies of the print or label filed, and on this certificate it is stated that it bears the label or print on which the protection is granted. This protection is for a period of 28 years. The label is an artistic production which goes on the article manufactured or on the receptacle containing the same, while a print may be the same figure in every respect, but it is used independent of the goods.

The fee in the case of a print or label application is returnable if the protection desired is not granted, if the applicant makes a request for the same, otherwise it appears to be kept in the Treasury.

If the print has been published for a certain period before the application the certificate is refused. If it does not show the article of manufacture to which it relates, certificate is refused; or if it is not artistic, it is likewise refused. Appeals from the decision of the examiner may be taken to the commissioner without fee.

All petitions relating to these matters are made directly to the Commissioner of Patents in person.

III. EXAMINER OF INTERFERENCES.

The examiner of interferences has original jurisdiction of all contested cases arising in the Patent Office. Such contests occur in connection with both patents and trade-marks.

Patent Cases.

Section 4904, Revised Statutes, provides that whenever an application for patent is made to the commissioner for an invention which interferes with any other pending application or with any unexpired patent, notice of this fact shall be given to the parties, and the case will be referred to the examiner of interferences to determine the question of priority of invention.

The practice in interferences follows in a general way the practice in equity cases in United States courts; the issue is, however, made up by the officials of the Patent Office and not by the parties themselves.

When two or more parties are found to be claiming substantially the same patentable invention, the principal examiner having charge of the cases, either by suggestion to the parties, or by any other practicable means, gets the claims of the cases in identical form, and then prepares notice for the interference. A copy of this notice is provided for each of the several parties, and a somewhat similar notice for the examiner of interferences. These notices are forwarded to the docket clerk, who has charge of all papers relating to contested cases, and once each week all notices that have been forwarded to him during the preceding week are reviewed by the examiner of interferences, and, if in proper form, are forwarded to the several parties or to their attorneys.

The parties are not immediately allowed access to each other's applications, but when the notices are sent out each party is required to file within a specified time (varying with the distance of the parties from the office—usually 30 days for any part of the United States; but longer when the parties live abroad) what is known as a preliminary statement. In this instrument he is required to make a statement under oath of the dates upon which the essential acts of invention, such as conception, disclosure to others, drawings, reduction to practice, etc., took place. The object of this statement is to require the party before having access to an opponent's case, and before he has any idea of the time at which his opponent may have made the invention, to himself make allegations which shall be binding upon him in the subsequent conduct of the case. These statements have been required for many years and have proved of great value in the subsequent conduct of the proceedings. A party having sworn to dates and facts without a knowledge of the case of his opponent is not in a position to successfully vary these dates when testimony is taken.

After these statements have been filed and found to be in proper form the cases of the respective parties are thrown open to all parties.

In setting up the interference the party first in the office is made the senior party, and parties later to file are made junior parties in the order of the filing of their respective applications. The burden of proof therefore rests upon that party which was last to file.

When the preliminary statements are approved, if it is found that a junior party alleges a date of conception which is subsequent to the date upon which the senior party filed his application in the Patent Office, an order is at once issued against such junior party to show cause within a time specified (usually about 30 days) why judg-

ment upon the record should not be issued against him. The filing of a complete and allowable application has been held to be the equivalent of an actual reduction to practice or demonstration of the success of the device. A party, therefore, who does not claim to have conceived the invention prior to the filing date of such other party is in no position to enter upon a contest of priority proper, and no necessity for the taking of testimony in such cases ordinarily arises. But in those cases where the junior party alleges a conception which is earlier than the filing date of the senior party, a condition arises which may enable him to establish his right as against those of such senior party. In the latter cases, when the preliminary statements are approved, times for the taking of testimony are at once fixed.

MOTIONS TO DISSOLVE.

After the preliminary statements have been approved, whether an order to show cause has been issued or times for the taking of testimony have been set, motions will be entertained to dissolve the interference because of some informality in the declaration which is of such a character as will prevent a proper determination of the question of priority of invention; or which make it appear that some or all of the parties have no right to make a claim for the subject matter in interference; or which attack the patentability of the issue; or which urge that the issue means one thing in one case and another thing in some other case.

Motions to dissolve are therefore somewhat analogous to demurrers in equity procedure. If the grounds of the motion are well taken and the interference is dissolved, the proceeding terminates.

Motions to dissolve are not decided by the examiner of interferences, but are referred to the principal examiner in whose division the interference originated for his consideration of the matters raised thereby. This is because the examiner who has charge of any particular class or line of invention is necessarily more expert on the question of patentability, or of the right of the parties to make the claims, than any other one person can possibly be. His familiarity with the particular subject gives him the information which peculiarly fits him for determining questions of this character.

Therefore when motions to dissolve are presented they are accompanied by a motion to transmit the same with the interference to the principal examiner for his consideration of the motion. These motions to transmit are heard before the examiner of interferences, who passes upon the form and timeliness of the same. If the motion is in proper form and is presented without undue delay, it is transmitted to the examiner. If the motion has been unduly delayed and no sufficient excuse shown for the delay, or if the motion raises some question which can not be considered by a motion to dissolve, the motion is not transmitted. From the action of the examiner of interferences transmitting motions of this character no appeal lies. If, however, the motion to transmit is denied, an appeal lies to the commissioner in person.

When the motion to dissolve shall have been transmitted, either by the examiner of interferences or by the commissioner on appeal, the examiner then having charge of the case sets a hearing on the merits of the motion and notifies the parties of the time and place of such hearing. At the time fixed the parties are heard in oral argument. The principal examiner than renders a decision in written form upon the questions presented. If the question of informality in the declaration of the interference is raised, an appeal from his decision lies to the commissioner in person, whether he grants the motion or denies the same. If the motion raises the question of the patentability of the issue, or the right of any of the parties to make the claims, or different meanings in cases of the respective parties, and the examiner holds that the issue is patentable, or that the parties have a right to make the claims, or that they mean the same in the case of all the parties, his decision is final and no appeal lies. If, however, he holds adversely on any of these three points—that is, holds that

the issue is not patentable, or that one or more of the parties has no right to make the claims, or that the claims mean different things in the cases of the respective parties—an appeal may be taken to the examiners in chief. If they reverse the examiner, their decision is final. If, however, they sustain the examiner, an appeal lies to the commissioner in person. The decision of the commissioner on these matters is final.

When the motion to dissolve, if any is brought, shall have been finally disposed of the case is returned to the jurisdiction of the examiner of interferences, who resumes proceedings therein. In those cases in which the junior party has failed to overcome the filing date of the senior party, and is therefore under an order to show cause why judgment should not issue, if such party has been unsuccessful in securing the dissolution of the interference judgment is at once entered on the record. In those cases in which the junior party has alleged the date of conception earlier than the filing date of the senior party, times for the taking of testimony are set.

In fixing times for the taking of testimony the junior party is usu lly given 60 days within which to complete his prima facie proofs, and the senior party is given 30 days within which to introduce his evidence; 15 days are then allowed the junior party for rebuttal. A date for final hearing of the merits is then fixed at about 60 days after the time for closing the rebuttal proofs. The rules of practice require that the testimony shall be presented in printed form, the junior party 40 days and the senior party 20 days before the hearing. In those cases where more than two parties are involved in an interference the junior party is allowed 60 days in which to introduce his proofs, and each of the other parties 30 days, with the necessary time for rebuttal as to those parties entitled to take rebuttal proofs. If briefs are filed, they are required to be in printed form.

At the time fixed for the final hearing the parties are given opportunity to argue the case orally before the examiner of interferences, ample time being allowed for the presentation of the case. The testimony is than read and the briefs considered by the examiner of interferences, or by some one of the several assistants assigned for that purpose, and a written opinion prepared and decision rendered on the merits, awarding priority of invention to one or the other of the parties involved. From his decision an appeal lies to the examiners in chief; from their decision an appeal lies to the Commissioner of Patents in person; and from the commissioner appeal lies to the Court of Appeals of the District of Columbia.

Trade-Mark Cases.

The trade-mark work coming before the examiner of interferences consists of: (1) Trade-mark interferences; (2) oppositions to the registration of trade-marks; and (3) applications for the cancellation of trade-mark registrations previously granted.

INTERFERENCES IN TRADE-MARK CASES.

The jurisdiction of the examiner of interferences in trade-mark cases is fixed by the act of February 20, 1905, which is the law now in force relative to trade-mark registrations. Section 7 of that act provides that whenever application is made for the registration of a trade-mark which has been appropriated by another to goods of the same descriptive properties, or for which another has filed an application for registration, an interference shall be declared. It is further provided that the case be then referred to the examiner of interferences to determine the question of the right of registration. The same section of the statute places oppositions within the jurisdiction of the examiner for trade-marks, while section 13 of the same act provides that when an application for cancellation of an existing registration is filed the commissioner shall likewise refer the matter to the examiner of interferences for determination.

TRADE-MARK INTERFERENCES.

A trade-mark interference may arise between two or more applicants who are seeking registration of the same mark, or substantially the same mark, for the same goods, or substantially the same goods; or such interferences may be between an application and a registration or registrations previously granted.

The practice in trade-mark interferences follows closely that which obtains in patent interferences. In trade-mark cases, however, no preliminary statements are required. In registering trade-marks the Patent Office simply registers an existing right, which from its very nature arises from acts done in public, that is, as a prerequisite to the right of registration the mark must have been used on goods publicly in commerce. The notices of interferences are, in trade-mark cases, prepared by the examiner in charge of trade-marks and designs, and are forwarded to the examiner of interferences through the docket clerk, just as in patent cases. As no preliminary statements are required, times for the taking of testimony are at once set.

Motions to dissolve are entertained in trade-mark interferences, just as in patent interferences. It is required that they be made promptly after the declaration of the interference, and, as in patent cases, are presented before the examiner of interferences, with a motion to transmit them to the examiner of trade-marks and designs. If presented promptly and in proper form, they are forwarded to that official, who determines the merits of the questions presented. From his action granting the motion appeal lies to the commissioner in person. From his decision denying the motion no appeal lies.

After the motion to dissolve (if any is brought) shall have been finally determined, times for the taking of testimony are again fixed and the parties given an opportunity to introduce evidence, the same as in patent cases.

The rules require that the testimony be in printed form, just as in patent cases, and the case is heard on its merits by the examiner of interferences at a time fixed for that purpose. A written opinion is prepared, and decision made after consideration of the testimony.

The jurisdiction of the examiner of interferences in trade-mark cases is different from what it is in patent cases. In patent cases he can decide only the question of priority of invention; he can not pass upon the question of the patentability of the issue. In trade-mark cases, however, he is required by the statute to determine the right to registration, and may pass upon any question which bears upon the right of a party to secure a registration of his mark.

Appeal from the decision of the examiner of interferences lies directly to the commissioner, no appeal being provided to the examiners in chief, as in patent cases. From the commissioner an appeal lies to the Court of Appeals of the District of Columbia.

OPPOSITIONS.

The practice in oppositions and in applications for cancellation differs from both patent and trade-mark interferences, in that issue between the parties is formulated by pleadings, as in general equity procedure.

By the act of February 20, 1905, it was provided that upon publication of any trade-mark, after allowance thereof by the examiner of trade-marks and designs, any person who believes he will be damaged by the proposed registration may oppose such registration by filing in the Patent Office within 30 days from the date of publication a verified notice of opposition.

Under the authority conferred by the statute upon the commissioner, rules have been provided for the conduct of opposition and cancellation cases, just as for interferences. An opposition is treated as an instrument somewhat analogous to a bill in equity. After the same is filed, the applicant for registration, who is in effect the defendant, is given a time within which to answer or demur to the opposition, and a

time is fixed for the filing of a replication. If a plea or demurrer is presented, the same is treated as a similar pleading would be in an equity case. If no plea or demurrer is filed, or if these pleadings are overruled, an answer is filed and issue joined in the manner provided by the general equity rules. Times for the taking of testimony are then fixed, and the parties given an opportunity to produce their testimony, just as in interference cases.

As in other contested cases, the evidence is required to be presented in printed form, and the case is heard on its merits before the examiner of interferences, from whose decision an appeal lies to the commissioner, and from the latter to the Court of Appeals of the District of Columbia.

While in trade-mark interferences the examiner of interferences is required to determine all questions which may bear on the right of registration, in oppositions and cancellations he can decide only the questions put in issue by the pleadings of the parties themselves.

CANCELLATIONS.

The trade-mark act approved February 20, 1905 (sec. 13), provides that whenever any person believes himself injured by an existing registration he may file an application for cancellation thereof.

The practice established for disposing of cancellations is substantially the same as that in oppositions. The application for cancellation is given, generally, the same standing as a bill in equity, issue is joined as in an equity proceeding, and testimony is taken under the rules which govern the introduction of testimony in other contested cases in the Patent Office.

These cases, like other contested cases, are heard on the merits in the first instance by the examiner of interferences. From his decision appeal lies, as in other trade-mark cases, to the commissioner, and from the latter to the Court of Appeals of the District of Columbia.

INTERLOCUTORY PROCEEDINGS.

In disposing of these cases the examiner of interferences is called upon to hear and decide many interlocutory matters. Motions of every character are being constantly presented for consideration; such, for instance, as motions to amend preliminary statements, motions to shift the burden of proof, motions to extend time for taking testimony, motions for permission to take testimony abroad, motions to stay proceedings, etc.

Some idea of the magnitude of the work may be gathered from the fact that for some years past there have been instituted annually from 1,500 to 1,700 or more contested cases of every character. Many of these are, of course, disposed of without the taking of testimony, as, for instance, by judgment on the record, as where a junior party in a patent interference fails to overcome the filing date of the senior party; or by judgment by default, as where a junior party who bears the burden of proof fails to take testimony; or by dissolution. But for some years past the average number of cases which have come on each year for final hearing upon testimony, and upon which it has been necessary to prepare formal opinions and render formal judgments, has amounted to between 300 and 350 each year. The volume of the testimony varies greatly. In small cases, it may not amount to more than 25 or 50 pages, while in complicated cases, it may amount to as much as 2,000 pages or more. The volume of testimony is such that it requires the continuous aid of seven assistants who devote all their time to the reading and digesting of the evidence, and the preparation of reports therefrom. There are now about 40 cases which have not been read, which is about six weeks' or two months' work. Men are selected from among the assistant examiners and assigned to the interference division. The force is adjusted to meet the conditions.

IV. BOARD OF EXAMINERS IN CHIEF.

[Established 1861.]

After a case is twice rejected by the principal examiner applicants are permitted to take an appeal to the board of examiners in chief. The applicant or his attorney files his appeal paper, which simply states that he appeals from the decision of the examiner rejecting such and such claim and accompanies his paper with the proper fee, $10.

Then upon the receipt of the appeal, which is sent to the principal examiner who has charge of the case, he makes what is called the examiner's statement or answer, which is a paper stating what claims are rejected, what references are cited against them, and a brief statement of his reasons for the rejection of the claims upon these references. This usually explains the construction involved and also the construction of the references. That statement, with the papers filed in the case, is then transmitted to the docket clerk, and in the docket clerk's room there is a clerk who attends to all the records of the board of examiners in chief. This clerk then sets a date for the hearing of the case and sends out notices of the hearing. These are set in the order in which they are filed. and if there is any reason why a case should be expedited an earlier date is set and reasons given for doing so.

Hearings are held every day except Saturday, beginning at 1 o'clock and extending as long as may be necessary to clear up the cases set for hearing on that day. Sometimes as many as 8 or 10 cases are set for hearing in one afternoon—about all that can be heard and fully as much as can be studied up and decisions rendered on in the remainder of the time at the board's disposal—which is in the mornings. At the present time (October) hearings are being set for March. The board is overcrowded with work. After the hearing is had it can not be definitely stated how long it will be before rendering a decision—sometimes a small case is disposed of the next morning; a large case may take two months or more.

The board is composed of three members, who sit together when they are all present, but two members may sit and transact business. This latter course, however, runs the risk of no decision and in that event the case is set for a rehearing. In the event one of the members is disqualified from sitting owing to his having been a principal examiner on that case, then when there is not a majority decision the decision of the principal examiner below stands.

The board is appointed by the President, with the advice and consent of the Senate. The tenure of office is at the will of the President. The board is not political, and the members do not resign when there is a change of administration.

The board has before it the briefs of the appellant; the examiner does not appear at all. The applicant or his attorney is the only one heard.

The duties of this board are entirely judicial.

In addition to the ex parte cases all appeals from the decision of the examiner of interferences come here.

After motions for dissolution are made in such cases the examiner of interferences considers whether they are in proper form and made within the proper time; if so, he transmits the motions to the principal examiner for his consideration.

From all decisions of the principal examiner in these cases which deny the patentability of an applicant's claim or his right to make the same there is an appeal to this board. That appeal is heard inter partes, both sides being represented if they choose and both making arguments before the board.

From a decision of the principal examiner affirming the patentability of a claim or claims no appeal lies.

When the motions have all been decided by the board, if it is determined that the interference is to proceed the papers are remanded to the examiner of interferences, who then sets a time for the taking of testimony. The junior party takes his testimony and the others follow in the order of their seniority. The rules of practice

prescribe the method of taking testimony. It is generally taken before a notary public by consent of the parties, and the witnesses appear voluntarily, or they may be subpœnaed by the United States district court, upon the request of a party.

After the testimony is all in, the case is set for final hearing and the examiner of interferences renders his decision, awarding priority according to the testimony upon the several counts of the issue. From the decision of the examiner of interferences an appeal lies to the board of examiners in chief. And in those cases, as in the ex parte cases, the docket clerk sets a date for the hearing merely by the condition of the calendar; and on the day of the hearing the parties are heard as in any case in court, the appellant being heard first, followed by the appellee, and the argument being closed by the appellant. These cases are decided by the board as it is able to reach them, depending upon the condition of the docket.

An interference frequently requires a long time for decision. There are frequently thousands of pages of testimony to read. In one case in the summer of 1912, the board was about two months working up the case. It took the examiner of interferences about three and a half months. The board frequently has interference cases which take two or three weeks, and of course that delays all the ex parte cases at times.

Under the statute defining the duties of the board the commissioner may call on it for other like duties, etc. (Sec. 482, R. S.)

All matters involving rules and details affecting internal practice in the office go to the Commissioner of Patents. Many of the disputes, such as whether the invention was disclosed, etc., questions between the examiner and applicant, go to the board of examiners in chief.

Delays in settling cases are due to insufficiency of force for the amount of work. Until a year or two ago the board had no assistance, but now it has one assistant assigned, and he works about a month with each member of the board.

Cases are set for hearing, and each day when the blotter is set up for the day the cases are assigned the individual members of the board in rotation, and in the long run the work averages up.

The following is a statement of the work of the board:

Year ending June 30, 1912.

Appeals to examiners in chief in interference cases	176
Ex parte appeals to examiners in chief	933
	1,109
Number of appeals in interference cases disposed of	143
Number of ex parte appeals disposed of	694
	837
Interference cases awaiting action	111
Ex parte cases awaiting action	532
	643

Appeals to the examiners in chief.

Year.	Ex parte.	Interference.	Total.	Year.	Ex parte.	Interference.	Total.
1902	565	124	689	1907	849	55	904
1903	651	143	794	1908	585	212	797
1904	657	159	816	1909	782	220	1,002
1905	705	166	871	1910	922	210	1,132
1906	675	150	825	1911	928	172	1,100

V. APPEALS TO THE COMMISSIONER OF PATENTS.

Should the board of examiners in chief affirm the decision of the principal examiner, the applicant may appeal to the commissioner in person from the decision of the board on the payment of the required fee—$20. The same subject matter, all the papers, and everything in relation to the case is gone over again by the commissioner. The commissioner hears the evidence from the attorney or the applicant both orally and in writing.

COMMISSIONER OF PATENTS.

Appeals lie to the board of examiners in chief from the 43 examining divisions of the Patent Office.

The principal examiners charged with those divisions have quasi-judicial functions. Appeals lie also to the board in interference cases before the examiner of interferences. If the board of examiners in chief in ex parte cases sustains the examiner the case is appealable to the Commissioner of Patents. If the board reverses the examiner in an ex parte case and allows the application, it is passed to issue and becomes a patent. In the cases of interferences which are first heard by the court of first resort, the examiner of interferences, whether the board sustains the examiner of interferences or reverses him, being an inter partes matter, appeal will be taken by one side or the other to the Commissioner of Patents. Other appeals which do not come to the board are all appeals from the examiner of trade-marks in refusing to register trade-marks. Also in some cases from his refusal to register a print or label.

In connection with all those cases so appealed are many motions brought both in ex parte and inter partes cases to the commissioner. The cases are all docketed from all these sources and are heard on a day set by the commissioner in person or by one of the two assistant commissioners. The commissioner's docket is generally divided up for hearings between the commissioner and two assistant commissioners. The assistant commissioners have jurisdiction on appeal only in such cases as are referred to them by the commissioner in accordance with the law. In most all cases on appeal the parties are represented by counsel. Cases where the inventor seeks to conduct his own case are very rare, either in the Examining Division where they start or on appeal. It is almost necessary that an applicant for a patent be represented by an attorney who is skilled in that particular branch of practice. Everything connected with applications for patents or trade-marks is highly technical and it is impossible for a general law practitioner to successfully handle them.

The rule in ex parte cases on appeal to the commissioner is that the attorney shall have 30 minutes. In inter partes cases the rule is that each side shall have one hour. In special cases more time is often asked and the attorneys are given more time than the rule states.

The number of cases on the docket of the commissioner averages throughout the year about 10 a day; that is for three days of the week, which are the hearing days—Tuesdays, Wednesdays, and Fridays—although frequently cases are heard on other days when the docket is very much crowded. These other days, however, are really required in which to write up the decisions.

Many motions in connection with these cases are heard, and these, of course, are all decided outside of the regular hearings. The practice is very similar to practice in courts.

When an appeal is taken the case comes to the docket clerk and he sets a time for the hearing.

The decisions in all these motions in connection with cases and the decisions finally disposing of the cases themselves are written out and all these motions of record are copied in full and are made part of the permanent records of the office, copies of the same being sent to the parties in the case.

In addition to appeals to the commissioner, noted above, he also entertains petitions which, during the fiscal year ended June 30, 1912, amount to 2,600.

The following statement is an illustration of the number of appeals, etc., handled by the commissioner and his two assistants during the fiscal year 1912:

Applications for patents for inventions.

Year ended June 30:		Year ended June 30—Continued.	
1903	49,199	1908	58,527
1904	50,321	1909	62,800
1905	52,323	1910	63,365
1906	55,619	1911	65,154
1907	56,514	1912	69,236

Applications for patents, including reissues, designs, trade-marks, labels, and prints.

Year ended June 30:		Year ended June 30—Continued.	
1903	54,256	1908	68,441
1904	55,468	1909	73,026
1905	66,228	1910	72,533
1906	68,881	1911	74,677
1907	66,795	1912	79,747

Appellate work, year ended June 30, 1912.

Number of interferences declared	1,642
Number of interferences disposed of before final hearing	1,241
Number of interferences heard	239
Number of interferences disposed of	284
Number of interferences awaiting decision	54
Appeals to examiners in chief in interference cases	176
Ex parte appeals to examiners in chief	933
	1,109
Number of appeals in interference cases disposed of	143
Number of ex parte appeals disposed of	694
Total	837
Interference cases awaiting action	111
Ex parte cases awaiting action	532
Total	643
Appeals to commissioner in interference cases	100
Appeals to commissioner in opposition cases	13
Appeals to commissioner in cancellation cases	4
Ex parte appeals to commissioner	173
Interlocutory appeals to commissioner	245
Ex parte appeals in trade-mark cases	68
Total	603
Petitions to commissioner	2,600
Total	3,203

Number of cases disposed of by commissioner:	
Appeals in interference cases	110
Appeals in opposition cases	13
Appeals in cancellation cases	1
Ex parte appeals	174
Interlocutory appeals	243
Ex parte appeals in trade-mark cases	55
Total	596
Petitions to commissioner	2, 599
Total	3, 195

Appeals to Court of Appeals, District of Columbia:	
Ex parte cases	34
Interference cases	55
Opposition cases	4
Cancellation cases	2
Total	95

In all, the Court of Appeals of the District of Columbia so far in the calendar year 1912, has handled 114 cases, of which 47 are Patent Office cases.

The business of the United States Court of Appeals of the District of Columbia is about one-half or very nearly one-half from the United States Patent Office. In one year it was 48 per cent. It usually runs a little under 50 per cent.

A petition to the Commissioner of Patents is an instrument praying the commissioner to compel a subordinate official to act in a particular and specific manner on a question of difference in opinion between an applicant and the office where some question of form is at issue; or praying the commissioner to grant a request of the applicant in connection with some case in the office, other than on its merits. A petition differs from an appeal in that an appeal is a request to a higher official or tribunal to reverse the action of a subordinate one and deals with the merits of a case only, while the petition does not deal with the merits, but is either a request for a ruling on a question of form or is a request for an action which in itself does not affect the merits of the case.

Should a principal examiner differ with an applicant as to the merits of a claim in a patent case and rule accordingly, the applicant may appeal from his action to the board of examiners in chief. A petition, however, would not deal with the merits, and would be presented directly to the Commissioner of Patents; and as illustrating that petitions may be made on a great variety of points raised in Patent Office practice, the following are given as examples of some of the cases on which petitions may be made:

Should an applicant "abandon" an application by not acting on the same within one year from a last action thereon by the office, he may "petition" the commissioner to "revive" the case, and if his excuse for allowing the case to become abandoned satisfies the commissioner, the latter may, at his option, restore the application to its previous status in the office.

Where a case has been finally rejected the applicant can petition to have it reopened.

Where an examiner takes exception to the number of drawings filed in a patent case and the applicant desires that number to be on file, the applicant may petition for his point.

A petition may be filed requesting the commissioner to instruct the examiner to accept a substitute specification or drawing in a case when the examiner has refused to accept the same.

All questions of informalities in the petition, oath, specification, etc., are petitionable to the Commissioner of Patents.

Petitions for the return of moneys in certain cases.

Petitions to make amendments after the allowance of an application; for instance, where the applicant wishes to change the language in a claim, or insert a new claim.

Petitions in case of assignment; sometimes papers are received which are asserted to be assignments, but which the Assignment Division claims not to be such.

Petitions to inspect pending applications which involve the alleged right of some party to look at somebody else's application in cases where suits are involved.

Petitions in interference cases where limit of time for appeal has expired, etc.

Petitions in connection with corrections on patents.

There were 2,600 petitions filed with the Commissioner of Patents during the fiscal year ended June 30, 1912. These petitions are placed on the docket and are assigned for action by the Commissioner of Patents to himself, the Assistant Commissioner of Patents, and the First Assistant Commissioner of Patents.

The decision of the Commissioner of Patents on petitions is final and the principal examiners are bound by them.

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APPENDIX H.

PUBLICATIONS OF THE PATENT OFFICE.

PUBLICATIONS OF THE PATENT OFFICE.

Introduction.

The extent to which the Patent Office engages in the compilation and distribution of printed matter pertaining to its activities is of such magnitude and importance as to command special consideration in any proposed plan looking to increased economy and efficiency in the conduct of the affairs of that office.

If there were no other considerations directing attention to an inquiry along these lines, the mere fact that the amount of money expended for printing during the past fiscal year was approximately $600,000 would in itself warrant a close examination into this particular activity. Such a large annual expenditure would indicate that the publication work was of unusual proportions and that there might be an opportunity for a reduction in output or changes in present practices without any loss in value or in the wide dissemination of the information published.

Some idea of the kinds of publications issued by the Patent Office can be obtained from the following list:

List of Publications.

1. Printed copies of patents:
   (*a*) Original issues.
   (*b*) Reproduced copies.
   (*c*) Reissues of patents.
2. Printed copies of designs.
3. Trade-marks printed for opposition.
4. Decisions of the Commissioner of Patents (weekly).
5. Index of the Official Gazette (weekly).
6. The Official Gazette.
7. Printed copies of Registered Trade-Marks.
8. Monthly volumes of Specifications and Drawings.
9. Monthly volumes of the Official Gazette.
10. Title pages and digest to monthly volumes of the Official Gazette.
11. Index to monthly volumes of the Official Gazette.
12. Decisions of the Commissioner of Patents (annual).
13. Annual Report of the Commissioner of Patents to the Secretary of the Interior.
14. Annual Report of the Commissioner of Patents to Congress.
15. Annual Report of the Commissioner of Patents to Congress, containing lists of patentees and inventions.
16. Manual of Classification.
17. Classification Bulletins.
18. Definitions of Revised Classes, etc.
19. Briefs for the Commissioner of Patents.
20. Patent Laws, with annotations.
21. United States Statutes concerning the registration of trade-marks.
22. Trade-mark law amendment.
23. United States Statutes concerning the registration of prints and labels.
24. Rules of Practice in the United States Patent Office.
25. Extract from Rules of Practice (pertaining to assignments).
26. Extract from Rules of Practice (registry of attorneys).
27. Roster of Registered Attorneys (revised to January, 1907).
28. Attorneys admitted to practice (supplement to list of January, 1907).
29. Manual of Classification of the German Patent Office.
30. Price List of Publications of the Patent Office.
31. Extract from Price List (ordering manuscript and photo copies.)

In the foregoing list, an attempt has been made to arrange the publications, in so far as it is possible to do so, in their proper sequence. This has been done for the purpose of showing the relation existing between the different publications; and in the preparation of the separate descriptive statements regarding each individual document contained in this report this order of arrangement has been followed.

Before taking up for minute and complete consideration any of the publications here listed it is advisable to state briefly the functions and organization of those divisions of the Patent Office which are charged with the duty of printing and distributing the publications.

At the present time there are three principal divisions handling work of this character; viz (1) the Issue and Gazette Division, (2) the Publication Division, and (3) the Manuscript and Photolithographic Division.

ISSUE AND GAZETTE DIVISION.

The Issue and Gazette Division is, in large part, the editorial division of the Patent Office. In this division the copy for several of the publications, and the requisitions for the printing of all of them, are prepared; and the data for all publications are sent through this division to the Government Printing Office to be printed. The preparation of indexes to the Official Gazette is also done in this division, as well as a small amount of proof reading and other work incidental to the printing of the documents in their completed form.

On the other hand, the Issue and Gazette Division performs work relating to the custody of allowed applications, the action after payment of final fees, and the issuance to inventors of Letters Patent.

The force of employees of the Issue and Gazette Division engaged upon work pertaining to the compilation and printing of publications is shown in the following list, with character of duties and salary of each employee:

Position.	Character of duties.	Salary.
Chief	Chief of division	$2,000
Assistant	Assistant chief of division	1,800
Clerk	Compiles Annual Volume Commissioner's Decisions; makes digest and index to decisions; prepares copy for first two pages of Official Gazette; and keeps record of requisitions.	1,400
Do	Correspondence; writes requisitions	1,200
Copyist	Writes index cards	720
Clerk	Revises files for printer	1,200
Do	do	1,000
Copyist	Revises patents; assists proof readers	900
Do	Revises patents	900
Clerk	Prepares drawings for issue	1,400
Do	In charge of proof readers and revisers	1,200
Do	Proof reader	1,200
Do	do	1,000
Do	do	1,000
Copyist	do	900
Clerk	Revises allowed cases	1,000
Copyist	do	900
Do	do	900
Clerk	Prepares index cards	1,200
Do	do	1,200
Do	Revises files of trade-marks published for opposition; assists with index cards.	1,200
Copyist	Assists with index cards	900
Clerk	Prepares index cards	1,000
Copyist	Messenger	900
Messenger	do	360

PUBLICATION DIVISION.

The Publication Division has for its principal functions the receipt, custody, and distribution of publications of the Patent Office. Its work is, however, restricted to only a portion of the publications, since, under the act of Congress approved August 23, 1912, the Public Printer is charged with the duty of dispatching many of the Government publications. In the separate statements upon each publication which follow, mention will be made of the office which handles and distributes the particular publication described.

All requests for publications in the custody of, and for distribution by, the Patent Office are sent to this division to be filled. In addition to the large number of such requests received daily from miscellaneous sources, there are lists of regular subscribers to whom the different publications are mailed as soon as received by the Publication Division from the Manuscript and Photolithographic Division or the Government Printing Office, as the case may be. In view of the fact that practically all publications issued by the Patent Office are sold at stipulated prices, records are kept showing for each document the number on hand, the number distributed, and the amount received from sales.

The force of employees of the Publication Division is shown in the following list, with character of duties, and salary of each employee:

Position.	Character of duties.	Salary.
Chief	Chief of division	$2,000
Clerk	Acting assistant chief of division	1,400
Do	Minor supervisory	1,600
Do	do	1,200
Do	Charge of section mailing classified patents	1,000
Do	Charge of section mailing copies of patents on cash orders	1,000
Copyist	do	900
Clerk	Mailing copies of patents	1,200
Do	do	1,000
Do	In charge of classification lists	1,000
Do	Stenographer and typewriter	1,200
Do	do	1,000
Do	do	1,000
Do	Data clerk	1,000
Copyist	Recording clerk	900
Clerk	do	1,000
Copyist	Mailing reproductions	900
Do	do	720
Clerk	Mailing copies of patents	1,400
Do	do	1,000
Do	do	1,000
Copyist	do	900
Do	do	900
Do	do	900
6 copyists	do	720
Laborer	do	600
Do	do	480
Do	do	480
Clerk	Supplying local orders of patents	1,000
Copyist	do	900
Do	do	900
Do	do	720
Assistant messenger	Performs all heavy messenger work	720
Messenger boy	Messenger to chief of division	360
Laborer	Withdrawing patents from files	480
28 messenger boys	do	360
Assistant messenger	In charge of boys	720

MANUSCRIPT AND PHOTOLITHOGRAPHIC DIVISION.

While the Manuscript and Photolithographic Division, with respect to the extent to which it performs work relating to the publications of the Patent Office, is concerned solely with the reproduction of copies of patents, it does, nevertheless, have supervision over three very important matters bearing upon this particular class of publications. These are: (1) The ordering, examining, and distributing of the photolithographic copies of the drawings to accompany the patents; (2) the assembling, wire stitching, and delivering of the first printed supply of patents; and (3) the ordering, examining, and delivering of reproduced (photolithographic) copies of patents, the original printed supply of which has become exhausted.

The other lines of work coming under the authority of the Manuscript and Photolithographic Division, not relating to publications, are the preparation and comparison of copies of pending and patented files; the maintenance of complete patent files in the attorney's room and the record room; and the filing of abandoned and forfeited cases.

Following is a list showing character of duties and salary of each employee in this division whose duties relate to publication work:

Photolithographic section.

Position.	Character of duties.	Salary.
Chief of division		$2,000
Clerk	Acting assistant chief	1,600
Do	Proof reader and bookkeeper	1,200
Draftsman	Cleaning drawings	1,000
Clerk	Cleaning drawings, etc	1,000
Do	Preparing and making requisition for reproduction of exhausted copies of patents.	1,200
Copyist	Preparing Whatman copies for examiners and preliminary search room.	900
Do	Sending out drawings, etc	1,000
Do	Collects drawings, etc., for reproduction of exhausted copies	480
Do	Collects drawings, etc., for attorney's orders	900
Do	Collects drawings, etc., for reproduction	900
Do	Files drawings, etc., used for reproduction and current issue	900

Assembling and stitching section.

Position.	Character of duties.	Salary.
Clerk	In charge	$720
Do	Assembling copies	720
Copyist	Stitching and assembling	900
Do	do	900
Do	Making bulk of copies of patents	900
5 assistant messengers	Assembling copies	720
2 copyists	do	720
Laborer	do	480

Having indicated in the foregoing pages the scope of the publication activities of the Patent Office, it is proposed to now take up and present a comprehensive study of each publication according to the order hereinbefore stated. The treatment of each document, or pamphlet, will comprise a separate and individual section under the name of the publication to which it relates, and will embrace the details relative to compilation and printing.

1. Printed Copies of Patents.

(a) original issues.

As outlined in the list of publications the printed copies of patents are divided into three distinct classes, viz, (a) original issues, (b) reproduced copies, and (c) reissues of patents. Although these three classes relate to the same subject matter they do, nevertheless, constitute three separate publications with respect to their compilation and production. This division of patents has been here established for the particular purpose of describing them more extensively than could be done if they were all embraced under one general head.

The printed copy of a patent may be properly designated the fundamental publication of the Patent Office because of the fact that from it there emanates the greater part of all the publications of that office. For this reason alone it is entitled to first consideration and deserves detailed discussion in order that a complete knowledge of it may be had before proceeding to a description of the publications which spring from it.

The printing and publishing of patents is authorized by an act of Congress approved January 12, 1895 (28 Stat., 619), which provides as follows:

"The Commissioner of Patents, upon the requisition of the Secretary of the Interior, is authorized to continue the printing of the following:

"First. The patents for inventions and designs issued by the Patent Office, including grants, specifications, and drawings, together with copies of the same, and of patents already issued, in such number as may be needed for the business of the office."

The character of the information contained in such patents is, a description of the article, the claims made by the inventor (both of which together are termed the "specifications"), and the drawings, illustrating the more important features of the invention.

As finally passed for issue by one of the examiners, a patent, consisting of the specifications and drawings, and also all papers and memoranda relating to them, is sent to the Issue and Gazette Division in a manila file wrapper 14 by 24 inches in dimensions, and so creased as to make three folds—to one fold is attached all the drawings; to another the specifications; and to the last fold the memoranda. In this division, and in this form, the papers are subjected to an inspection and an examination for the purpose of correcting all informalities, discrepancies in the signatures, and the detection of irregularities in the drawings. If any corrections are required the papers or drawings are returned to the division from whence they came, for proper amendment, after which they are again sent to the Issue and Gazette Division.

From the date the patent is allowed by an examiner, the issue and printing of it is withheld for a period of six months, unless the final fee is paid within that time.

Upon the receipt, by the financial clerk, of the final fee the amount is noted on the letter transmitting the fee, and the letter is forwarded to the Issue and Gazette Division as authority for the patent to issue. In case the final fee is paid on or before Thursday, the patent will issue on the fourth Tuesday following. There is, therefore, a weekly issue of patents.

In order to produce a patent in its printed form it is necessary to pursue two separate and distinct processes:

First, the drawings, after being sent to the branch printing office located on the third floor of the Patent Office for the purpose of having the proper headings printed upon them, are sent daily to the Columbia Planograph Co., of Washington, D. C., to be photolithographed. The proof reading of the drawings is performed in the Manuscript and Photolithographic Division, after which the contractors are notified to furnish the required number of copies. These copies are delivered to room 178, Patent Office, where they are held to be assembled and stitched with the specifications.

Second, the specifications are sent to the Government Printing Office, and after being set up and twice proof read they are returned to the Issue and Gazette Divisions. In this division the work of the proof readers is revision only, covering such points as the comparison of names, residence, assignments, etc., and to answer the printer's queries. After the specifications have been printed they are delivered to room 178, where they are assembled with the drawings to which they relate and then wire stitched and delivered to the Publication Division on the day of issue.

The size of the patents is royal octavo, and the number of pages of both drawings and specifications varies so largely that it would be difficult to state the average number.

Some idea of the diversity of patents in this particular may be gained from a few patents selected at random:

Number of pages of drawings.	Number of pages of specifications.
3	5
7	11
24	44
81	64
163	55

The number of copies printed of each patent is 103. Of this edition of 103 copies the following allotment is made:

1 copy on bond paper for the inventor.
2 copies on heavy paper—1 for the examiner and 1 for the attorneys' room.
24 copies for foreign exchange.
1 copy for the "patented file."
1 copy for the bound volume.
1 copy to be used for reproduction purposes.
73 copies delivered to the Publication Division for sale and official use.

(B) REPRODUCED COPIES.

Before leaving the subject of the number of copies printed of each patent on the original requisition it is essential, in this connection, to call attention to the reproduction of copies of those patents which are nearly or entirely out of print. This work is of considerable magnitude, involving as it does an annual reproduction of about 22,000 patents, with a consequent cost of approximately $52,500.

Upon receiving notice from the Publication Division that the supply of certain patents is becoming exhausted the Manuscript and Photolithographic Division collects and prepares the drawings and specifications of the patents listed in the notice (a file of patents being kept specifically for this purpose) and forwards these, with the necessary requisition, to the Sackett & Wilhelms Co., at New York, N. Y., the present contractors for this work. The reproducing of these copies, with respect to both the drawings and printed specifications, is obtained by means of the photolithographic process. The number of reproductions ordered of each patent is dependent upon whether or not the patent is in great demand. If the patent is called for frequently, 100 copies are ordered reproduced, at the contract price of 52 cents per page; if it is not much sought for, then 50 copies are ordered, at the price of 60 cents per page.

A proof of the photolithographic copy is sent by the contractors to the Manuscript and Photolithographic Division, where it is read and revised and returned to New York for the completion of the work ordered. Unlike the finishing and delivering of the original supply of each patent issued, the reproduced copies are assembled, stitched, banded, and numbered by the contractors instead of in room 178 at the

Patent Office. Upon the receipt by the Manuscript and Photolithographic Division of the reproduced copies they are checked against the requisition in order to ascertain that all copies are accounted for and also to determine that the copies of patents sent to the contractors, from which the reproductions must be made, have been returned. the supply is then delivered to the Publication Division for distribution.

(c) REISSUES OF PATENTS.

Whenever any patent is found to be inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention more than he had a right to claim as new, and the error has arisen by inadvertence, accident, or mistake, a reissue of the patent may be had.

Practically the same procedure is followed with respect to the compilation and printing of a reissue as occurs in the case of a new patent, except that the necessary fee must be paid in advance; and the amended patent goes to issue as soon as allowed by the examiner.

The Issue and Gazette Division makes the necessary corrections in the original specifications of the patent, sends the "copy" to the Government Printing Office, revises the proof sheets, and returns them to the printing office to be printed. The usual number, 103 copies, is run off and delivered to room 178 to be assembled with the drawings to accompany the specifications. In nearly all, if not all, cases of reissues, the same drawings that formed a part of the first issue of the patent are used again without any modifications. The required number of these drawings is produced by the photolithographic process, the work being performed by the Columbia Planograph Co., of Washington, D. C., and after having been proof read and corrected, the final copies are delivered to Room 178. In this room the specifications and drawings are assembled, wire stitched, and after withdrawing the required number for the office files and the foreign exchange the reissues are sent to the Publication Division for distribution.

It should be stated that the publication of reissue does not prevail to any considerable degree. In fact, the number of reissues appearing each week is almost a negligible quantity as compared with the original issue of patents. The following statement gives a fair average of the number of patents and the number of reissues published each week for a period of four consecutive weeks:

	Number of reissues.	Number of patents.
Issue of Sept. 3, 1912	1	656
Issue of Sept. 10, 1912	0	668
Issue of Sept. 17, 1912	1	565
Issue of Sept. 24, 1912	1	606

Returning now to a further, and final, discussion of the printed copies of patents of the three classes described, the question of the cost of this publication should be here included. It is thought that information of this character can be best presented in the form of the following itemized statement showing the costs, during the fiscal year ending June 30, 1912, of each of the three classes of issues, viz: (1) Original issues; (2) reproduced copies; and (3) reissues of patents:

Class of issue.	Number of patents.	Cost of printing.	Cost of photolithography.	Cost of assembling and stitching.	Total cost.
Original issues	34,255	$269,162.89	$44,460.46	$9,660.00	$323,283.35
Reproduced copies	21,350	.....	52,323.53	.....	52,323.53
Reissues of patents	171	[1]	240.17	[1]	[1]

[1] Too small to be ascertained.

Copies of patents sell for the uniform price of 5 cents per copy. In the same period covered by the above statement the total receipts from sales of the three classes of issues aggregated the sum of $114,808.95. It is to be regretted that, by reason of the fact that no separate accounts of sales are kept, it is impossible to show what proportion of the entire receipts should be credited to each issue of patents.

2. Printed Copies of Designs.

The publication of a patented design consists of two sheets, one sheet containing the specifications and the other sheet the photolithographic copy of the drawings. These sheets are not stitched or fastened together, but in order to keep the supply of one design properly separated from the others each issue is placed in a manila jacket especially made for the purpose of storing the stock kept for distribution.

In the editing and printing of designs the same procedure is followed as in the case of patents. When passed by the examiner, the design, with all accompanying papers, is delivered to the Issue and Gazette Division, where the revisers search for and make the necessary corrections regarding informalities in the papers, discrepancies in the signatures, and the like. The drawings and specifications are then separated, the former going first to the branch printing office to have the heading printed upon it, and then being sent to the Manuscript and Photolithographic Division to be forwarded to the Sackett & Wilhelms Co., at New York, to be photolithographed, and the latter (the specifications) are sent to the Government Printing Office to be printed.

The proof of the drawings is read and revised in the Manuscript and Photolithographic Division, and that of the specifications in the Issue and Gazette Division. The delivery of the finished copies of each sheet is made to room 178, in the Patent Office, where the supply of drawings and the supply of specifications relating to each design are assembled and placed in a manila jacket before referred to.

The publication of designs occurs weekly, and there are printed 50 copies of every patented design, of which the following allotment is made:

1 copy on bond paper for the inventor.
2 copies on heavy paper for Trade-Mark Division.
1 copy for the bound volume.
1 copy for "patented file."
1 copy to be used for reproduction purposes.
46 copies delivered to Publication Division for sale and official use.

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Whenever the supply of a particular design becomes exhausted, notice of this fact is sent to the Manuscript and Photolithographic Division, and that division withdraws from the files a copy of the design and specification and forwards this copy with a requisition to the contractors in New York City. As in the case of reproduced copies of patents, the reproduction of a number of copies of designs is performed by the photolithographic process after having been proof read. The contractors are ordered to deliver the required number of finished copies to room 178, in the Patent Office, where they are checked against the requisition and then delivered to the Publication Division for distribution.

The amount expended during the fiscal year ended June 30, 1912, for publishing patented designs included the two items of printing and photolithography. The cost of the printing was $7,650, and that of the photolithography was $585.50, a total cost of $8,235.50.

Copies of patented designs are sold for 5 cents per copy, and while it would be of interest to show the amount received from sales as against the cost of publishing it is impossible to obtain the figures because of the fact that no separate record is kept of the sales.

3. Trade-Marks Printed for Opposition.

This publication is also called "Illustrated Trade-Marks" or "Trade-Mark Portion of the Official Gazette." It is published in compliance with section 6 of the act of February 20, 1905, as amended March 2, 1907, which provides as follows:

"Sec. 6. That of the filing of an application for registration of a trade-mark which complies with the requirements of this act, and the payment of the fees herein provided for, the Commissioner of Patents shall cause an examination thereof to be made; and if on such examination it shall appear that the applicant is entitled to have his trade-mark registered under the provisions of this act the commissioner shall cause the mark to be published at least once in the Official Gazette of the Patent Office."

In form and size this publication is royal octavo, and the number of pages will vary from 10 to 18. It is issued weekly in an edition of 100 copies, single copies being sold for 5 cents each. The subscription price is $2 per year.

The trade-marks are presented so as to show for each the serial number, the class (by number and indicative term), name of the applicant, and the date the application was filed. This information is followed by a cut showing the trade-mark itself, and lastly there is given a brief description of the goods on which the trade-mark is to be used and the date since the applicant claims use. The last page of the pamphlet contains an alphabetical list of applicants for trade-marks.

The purpose served by this pamphlet is to give publicity to the character of trade-marks applied for, and if after a period of 30 days no opposition is noted, then the trade-marks are duly registered.

When passed by an examiner to be published for the probationary period of 30 days, all the papers pertaining to trade-marks are delivered to the Issue and Gazette Division. This division makes a cursory examination of the drawing of the trade-mark and the application accompanying it in order to correct any irregularities in the papers. The application is then sent to the Government Printing Office to furnish the particular items of information that are to be published in connection with the cut showing a facsimile of the trade-mark.

The drawing is extracted from the application and sent by the Issue and Gazette Division to the National Engraving Co., Washington, D. C., for the purpose of making a cut of the trade-mark. This cut is forwarded to the Government Printing Office, where it is used in the printing of this publication. The proof sheets are sent to the Issue and Gazette Division, read and revised, and the finished work is delivered to room 178 of the Patent Office.

It should be stated here that this pamphlet is, to all intents, the Trade-Mark Supplement of the Official Gazette, since the information contained in the pamphlet first appears in the Gazette; but in order to fill requests for just this particular class of information and no other, there are printed from the same type 100 additional copies of these pages. They are wire stitched and delivered to the Publication Division for distribution.

In view of the fact that the pages for this pamphlet are printed at the same time and from the same type as the Official Gazette, the cost involved is merely that of the paper and presswork necessary to produce 100 copies. During the fiscal year ended June 30, 1912, the cost of printing this pamphlet amounted to $196.90; and the receipts from sales were $148.80.

4. Decisions of the Commissioner of Patents—Weekly Edition.

This publication, like that of "Trade-Marks Printed for Opposition," is a supplement of the Official Gazette; that is, it consists of only a few pages of the matter presented in the first part of the Gazette and is printed at the same time and from the same type in order to obtain an extra number of copies for special use.

The first two pages of this pamphlet are prepared in the Issue and Gazette Division and show, on the first page, a table of contents of the Gazette, a statistical table showing the nativity of the inventors of the patents appearing in the current issue of the Gazette, and such notices relating to patents as the Commissioner of Patents may issue. On the second page there is contained information relating to the condition of the work pending in the Patent Office, showing in detail the character of the inventions under examination, the date of the application, and the number of applications pertaining to any one particular art which are awaiting action. In the remaining few pages of this pamphlet are the decisions of the commissioner. The "copy" for these few pages is prepared by the law examiners of the Patent Office and by them forwarded to the Issue and Gazette Division to be prepared for printing.

The proof sheets are read and revised in the Issue and Gazette Division and the final work ordered through it. Of this pamphlet there are printed 600 copies each week. Of this number 491 copies are distributed to the examining corps of the Patent Office and the balance are placed on sale by the Publication Division at the price of 5 cents per copy.

The cost of publishing this pamphlet during the fiscal year ended June 30, 1912, was $350.79, and the receipts from sales were $188.75.

5. INDEX OF THE OFFICIAL GAZETTE—WEEKLY EDITION.

This is the weekly index of the Gazette and appears as a separate publication only to the extent of 75 copies, being run off the press at the time the Gazette is being printed. In view of the fact, however, that it constitutes the index portion of the Gazette, some idea of its compilation should be given. After the final fee for the issuance of a patent has been received the allowed applications are arranged alphabetically, each stamped with its patent number and the date at which they are to issue written on the file wrapper. They are then delivered to the typewriters who prepare the index cards for that issue of the Official Gazette in which the patent will appear. Each card bears the name of the applicant, his residence, assignee (if any), title of invention, date of issue, patent number, and serial number. These cards are prepared in the Issue and Gazette Division and are made in triplicate—one set for the printer, one set for the Assignment Division, and the third set is retained in the Issue and Gazette Division. The extent to which this index appears as a separate publication is the extra printing of 75 copies, which are delivered to the Publication Division. Out of this number 26 copies are sent to foreign countries, 14 copies to the newspapers, 11 copies to subscribers at the price of 5 cents per copy, and the balance remain on sale.

No attempt is made to give the cost of producing these few pages in separate form as in the case of other supplements of the Gazette which have been previously described, as the cost is only a matter of paper and presswork.

6. OFFICIAL GAZETTE.

The Official Gazette is the most important publication issued by the Patent Office. It is valuable as a work of reference to the large number of patent attorneys practicing before the Patent Office, to the patent examiners, to the inventors, and to some degree the general public. It is published each Tuesday, simultaneously with the weekly issue of patents, and contains sections devoted to the following classes of information:

An illustration and first five claims of each patent.
An illustration and description of each design.
The illustration of each trade-mark published for opposition.
A list of trade-marks registered.
A list of labels registered.
A list of prints registered.
The decisions of the Commissioner of Patents.

In addition to the above there is included in the front of the Gazette the information described in this report under the title "Decisions of the Commissioner of Patents." The Gazette is printed at the Government Printing Office in editions of 5,540 copies. The publication is in magazine form and comprises an average of 250 pages in each weekly issue.

The publication of the Gazette is required by act of Congress, dated January 12, 1895, which provides as follows:

"The Commissioner of Patents, upon the requisition of the Secretary of the Interior, is authorized to continue the printing of the following * * *.

"Third. The Official Gazette of the United States Patent Office in numbers sufficient to supply all who shall subscribe therefor at five dollars per annum; also to exchange for other scientific publications desirable for the use of the Patent Office; also to supply one copy to each Senator, Representative, and Delegate in Congress; also to supply one copy to eight such public libraries having over one thousand volumes, exclusive of Government publications, as shall be designated by each Senator, Representative, and Delegate in Congress, with one hundred additional copies, together with bimonthly and annual indexes for all the same; of the Official Gazette the 'usual number' shall not be printed."

With the exception of that part of the Gazette which relates to the drawing and first five claims of each patent allowed, it is believed that the remainder of the contents of the Gazette have been fully covered in the treatment of publications in the preceding pages, all of which form a part of the Official Gazette. It needs to be explained, therefore, that the information presented relative to the patents—that is, one drawing and the first five claims—is the result of the efforts on the part of the Patent Office officials to keep within proper limits the amount of space devoted to showing information of this character. It has been found necessary to publish only the first five claims of every application, and the printer is guided entirely by this rule in setting up the copy for the Gazette.

Proof sheets of this publication are read and revised in the Issue and Gazette Division and the finished work is delivered to the superintendent of documents for distribution and sale. At the present time there are 3,020 subscribers, each paying $5 per year for the 52 issues. The receipts from this source are therefore $15,100. In order to supply the congressional quota 2,215 copies are required, and in addition there are 305 copies distributed in the Patent Office for official use. As against the amount received from subscribers ($15,100) the cost of publishing the Gazette during the fiscal year ended June 30, 1912, was $135,713.94.

7. Printed Copies of Registered Trade-Marks.

When 30 days have elapsed since a trade-mark was first published in the Official Gazette and no opposition to it has been filed with the Patent Office, the trade-mark is allowed by the examiner and published in leaflet form.

As passed by the examiner, a trade-mark consists of the three parts, i. e., a statement setting forth a description of the trade-mark, a sworn declaration by the person making the statement, and a drawing showing the trade-mark sought to be registered.

The statement and sworn declaration are sent to the Issue and Gazette Division, and, after these papers have been prepared for the printer, this division sends the "copy" to the Government Printing Office. The illustration of the trade-mark is printed between the statement and the sworn declaration from the same cut that was used for printing the illustration in that portion of the Official Gazette which appeared 30 days prior to the registration of the trade-mark.

As a rule, only one sheet is required for publishing all the data relative to a trade-mark, but in cases where the statement or sworn declaration are of unusual length two sheets are necessary. Such cases, however, are exceptional.

Of each trade-mark published, there are 53 copies printed, and of this number the following allotment is made:

1 copy on bond paper for the inventor.
2 copies on heavy paper—one for the examiner and one for the attorneys' room.
1 copy for the "patented file."
1 copy for reproduction purposes.
1 copy for the bound volume.
1 copy for the Trade-Mark Division.
46 copies to the Publication Division for distribution.

53 total.

During the fiscal year ended June 30, 1912, the number of trade-marks published was 4,635, at a cost of $7,650.

Whenever the stock on hand of each published trade-mark becomes exhausted additional copies are obtained by the photolithographic process. During the same fiscal year above referred to, there were 441 trade-marks reproduced by the Sackett & Wilhelms Co., at a total cost of $220.50. The total expenditure for issuing this publication was, therefore, the sum of $7,870.50.

These printed copies of trade-marks sell for the uniform price of 5 cents each. It is impossible to give the amount received from the sale of this publication, as no separate account is kept. All receipts from the sale of printed copies of patents, designs, and trade-marks are accounted for as a whole.

8. Monthly Volumes of Specifications and Drawings.

Although this publication has been recently discontinued by the act of Congress approved August 24, 1912, it is included in this report merely for the purpose of showing that until recently the publication of this information constituted a very important work in the Patent Office.

The publication consisted of the binding together of complete copies of specifications and drawings of patents issued during the month; and in assembling the complete monthly issues of patents three large volumes were required, each containing about 6,000 pages. Two of these volumes contained the specifications and text relating to all patents issued during the month and the other, or third volume, was devoted wholly to the collection of drawings related to the patents.

The publication or binding of the complete monthly issues of patents was required by the same act of Congress heretofore referred to under section 5 of that act which provides as follows:

"Fifth. Copies of the specifications and drawings of each patent issued, bound in monthly volumes, one copy for each of the executive departments of the Government, one copy to be placed for free public inspection in each capitol of every State and Territory, one for the like purpose in the clerk's office of the district court of each judicial district of the United States, except when such offices are located in State or Territorial capitols, and one in the Library of Congress, which copies shall be certified under the hand of the Commissioner and seal of the Patent Office, and shall not be taken from the depositories for any other purpose than to be used as evidence; also one hundred additional copies of the same, for sale by him at a price to be fixed by the Secretary of the Interior."

The repealing of this section of the act requiring the publication of this information was brought about through the recommendations of the departmental committee on publications of the Interior Department, which was appointed in connection with similar committees of other departments as a result of an investigation into the subject

of publications instituted by the President's Commission on Economy and Efficiency. A copy of these recommendations is as follows:

"Your committee has made a careful investigation of the use of the monthly edition of specifications and drawings and has come to the conclusion that this publication is not necessary and should be discontinued. There seems to be some doubt whether the Commissioner of Patents is required to issue this publication or is simply authorized to do so. Your committee makes no attempt to pass on the legal phase of this question. * * *

"The purpose of the monthly edition of specifications and drawings seems to have been to have the volumes available in the United States courts as evidence in patent cases and in the public libraries for the use of inventors and the general public. An investigation recently made by your committee discloses the fact that these volumes are seldom used as evidence in the courts. * * *."

When it is taken into consideration that each of these volumes contained 6,000 pages more or less and that there were bound annually 1,800 copies (5,400 books), it will be readily seen that this was a very expensive publication, involving approximately $50,000 per annum.

Of the total number five volumes were delivered to the Patent Office to be distributed for official use and the remainder were delivered to the superintendent of documents for distribution to the Federal courts and State libraries and to be placed on sale at $5 per volume.

9. Monthly Volume of the Official Gazette.

In order to have the information that is published in the Official Gazette in such form as to render it more valuable for ready reference, all the weekly issues which appear during each month are bound together in one volume. The only new material which is contained in this bound volume is an index of all the issues of the Official Gazette. This index is compiled and prepared at the Government Printing Office by means of rearranging alphabetically all the individual indexes of the various issues of the Gazette which are to be bound.

Each month 40 volumes of the monthly issue of the Gazette are bound, or 480 volumes during a year. Of these 480 volumes the following allotment is made:

12 volumes to the Publication Division.
12 volumes to the attorneys' room.
12 volumes to the law library, Patent Office.
24 volumes to the Assignment Division.

The remaining 420 volumes are kept on sale by the superintendent of documents at the price of $2.50 per volume.

The cost of producing these monthly volumes of the Official Gazette, during the fiscal year ended June 30, 1912, amounted to $735.45. As against this cost, the total receipts from sales during the same period were $168.

10. Title Pages and Digest to the Monthly Volume of the Official Gazette.

This is a pamphlet containing the first few pages of the monthly volume of the Official Gazette, together with a digest of the decisions of the Commissioner of Patents which have been rendered during the month. The number of pages in this pamphlet varies—the usual number, however, being about 10 pages each month.

The purpose of publishing this information in the form of a separate pamphlet is to permit those persons who receive the Official Gazette to bind the title-pages and digest with their monthly copies of the Gazette.

The preparation of the copy for this publication is handled in the Issue and Gazette Division, and, after being proof read and revised, 5,575 copies are furnished free to the subscribers to the Official Gazette and one copy to each library and Federal court

receiving the Gazette. The few remaining copies (about 340) are retained by the superintendent of documents and placed on sale at the price of 10 cents per copy.

The cost of printing this pamphlet during the fiscal year ended June 30, 1912, amounted to $979.94. There were no receipts from the sale of these pamphlets.

11. Index to Monthly Volume of the Official Gazette.

This index, which has been previously mentioned in connection with the "Monthly volume of the Official Gazette," is printed in separate form to the number of 5,575 copies for the purpose of furnishing to all persons receiving the Gazette an index for all the issues of that publication appearing during the month. It is supplied to all such persons free of cost.

This index will contain from 80 to 90 pages, which are wire-stitched and unbound. During the fiscal year ended June 30, 1912, the cost of printing these 5,575 copies amounted to $5,488.52; and although a small number of copies remained on sale the receipts from this source are insignificant.

12. Decisions of the Commissioner of Patents (Annual).

All decisions of the Commissioner of Patents rendered in each calendar year, relating to patent and trade-mark cases, are by the act of January 12, 1895, required to be printed and published. The section of the act authorizing this publication is as follows:

"Seventh. Annual volumes of the decisions of the Commissioner of Patents and of the United States courts in patent cases, not exceeding one thousand five hundred in number, of which the 'usual number' shall be printed, and for this purpose a copy of each shall be transmitted to Congress promptly when prepared."

The annual volume of the commissioner's decisions is a compilation of the decisions that have been previously published in the Official Gazette.

As published, these decisions constitute about 600 octavo pages, and of each annual edition 500 copies are printed—200 copies are bound in tan duck and 300 copies in paper covers. The information contained in the volume is compiled and furnished by the law examiners to the Issue and Gazette Division, and that division prepares the copy for the printer and reads the proof. During the fiscal year ended June 30, 1912, the cost of printing this publication amounted to $1,926.72.

The entire edition of the annual decisions of the Commissioner of Patents is placed on sale by the superintendent of documents. The copies of the decisions bound in tan duck sell for $2 per volume and the paper-covered copies sell for $1 per volume. Of the total edition of 500 copies the following number were sold:

55 bound copies, at $2	$110
62 unbound copies, at $1	62
Total receipts	172

13. Annual Report of the Commissioner of Patents to the Secretary of the Interior.

The Commissioner of Patents submits three yearly reports, all of which are required by law under section 4 of the act of Congress of January 12, 1895, which is as follows:

"Fourth. The report of the Commissioner of Patents for the fiscal year, not exceeding five hundred in number, for distribution by him; the Annual Report of the Commissioner of Patents to Congress, without the list of patents, not exceeding one thousand five hundred in number, for distribution by him; and the Annual Report to Congress, with the list of patents, five hundred copies for sale by him, if needed, and in addition thereto the 'usual number' only shall be printed."

In order to best serve the purposes of this report, these various reports of the Commissioner of Patents will be described separately under their respective titles.

The report made to the Secretary of the Interior relates to the fiscal year. The last report of this kind contained 22 pages, octavo in size, and the information published related to the volume of business conducted by the Patent Office during the period covered by the report, the condition of the work on hand, and the receipts and expenditures of the office—all of which was presented in statistical form, occupying 2 pages of the report. The remaining pages are devoted to a discussion of the needs and requirements of the Patent Office. The report is made to the Secretary of the Interior in order to enable him to furnish Congress with information.

The data for this report is prepared in the office of the Commissioner of Patents, and forwarded through the Issue and Gazette Division to the Government Printing Office.

As required by law, 500 copies of this report are printed to be distributed by the Commissioner of Patents upon request. It is wire stitched and bound in paper covers, and for the 500 copies printed for the fiscal year ended June 30, 1912, the cost was $58.06.

14. Annual Report of the Commissioner of Patents to Congress.

This report relates to the calendar year ended December 31, 1911, and, like the report submitted for the fiscal year, it contains information relating to the operations of the Patent Office for the period to which it relates, except that the work of the office is reported upon in a more comprehensive manner.

The data to be published in this report is prepared in the office of the Commissioner of Patents and forwarded through the Issue and Gazette Division to the Government Printing Office to be printed. It is royal octavo in form, is wire stitched and paper bound. As provided in the section of the act already quoted on page 2, the edition of this report shall not exceed 1,500 copies. The maximum number are usually printed and distributed by the Commissioner of Patents upon request.

The report for the calendar year ended December 31, 1911, contained 14 pages. Attention is called to the fact that the contents of this report are reprinted, in their entirety and without modification, in the "Annual Report of the Commissioner of Patents to Congress, containing lists of patentees and inventions," which is described below.

15. Annual Report of the Commissioner of Patents to Congress, Containing Lists of Patentees and Inventions.

Although this publication is officially designated as an annual report, it is more familiarly known as the annual index to the Official Gazette. This is due to the fact that the greater part of the one thousand or more pages contained in it are devoted to alphabetical lists of the names of patentees and inventions which appeared in the patent cases allowed by the Patent Office during the calendar year ended December 31, 1911.

The only part of this large volume which is not of an index nature is that portion embracing the first 14 pages which, as has been stated, is a duplication of the commissioner's annual report to Congress.

This report, or index, as it shall be here treated, is compiled at the Government Printing Office from the monthly indexes to the Official Gazette, which have already been described. The total number of copies printed of this index is 5,540, of which 5,415 are bound in paper and 125 in tan duck. The cost of this publication for the year 1911 was $6,656.13.

A copy of this annual index is mailed free to each subscriber to the Official Gazette and to each library and Federal court designated to receive the issues of the Gazette.

A small number are placed on sale at the price of $2 and $1 for the bound volume and the paper covered volume, respectively. The receipts from sales for this index during the year 1911 was $146.

The distribution and sale of these indexes is made by the superintendent of documents.

16. Manual of Classification.

The data contained in this publication were compiled and published for the purpose of making available in convenient form the official classification of subjects of invention in the Patent Office. In this classification, subjects of invention are divided into 243 classes, each class comprising a number of subclasses. To publish this information the manual consists of 100 pages, royal octavo in form, bound in paper, and the contents embrace the following:

(1) List of examiners in charge.
(2) List of examining divisions.
(3) List of classes alphabetically arranged.
(4) List of classes numerically arranged.
(5) List of classes arranged in numerical order under each class number.

These data were prepared in the Classification Division for the purpose of assisting the classifiers of that division in the extensive work now going on of reclassifying all patents, as well as for the use of the examining corps in the performance of their current examination work. It is the first publication of the kind ever issued by the Patent Office, and in addition to its value to the Patent Office force it has been in great demand by the patent attorneys.

The copy for the manual is sent to the printer through the Issue and Gazette Division, but the proof sheets are read in the Classification Division. Of this edition, 5,000 copies were printed at a cost of $1,600.36, and were delivered to the Publication Division for distribution and sale. The manual sells for 10 cents per copy, and during the fiscal year ended June 30, 1912, the sum of $105.70 was received from sales.

17. Classification Bulletins.

The results of the reclassification of the subjects of invention are published every six months in what is called a "Classification Bulletin," the last one issued covering the period from January, 1912, to June, 1912. The purpose served by bulletins of this character is that of making public, to all persons concerned, the various changes in classification that have been made. The bulletin appearing for the period mentioned is the twenty-eighth bulletin to be published and contains 35 pages, wire stitched and unbound.

The data for these bulletins are prepared in the Classification Division and sent through the Issue and Gazette Division to the printer. The proof sheets are read in the Classification Division. Of the last bulletin issued there were 3,000 copies printed at a total cost of $598.79.

These bulletins may be purchased from the Publication Division or from the superintendent of documents for the price of 10 cents per copy. During the fiscal year ended June 30, 1912, the receipts from the sale of this publication amounted to $124.30.

18. Definitions of Revised Classes, Etc.

This volume is a compilation of the information published in all the "Classification Bulletins" issued to January 1, 1912, arranged by the numerical order of classes. The volume contains, therefore, the "Classification Bulletins" numbered from 1 to 27, inclusive, which represent the work of reclassification that has been performed during the past six years. Thus there is published in convenient form all the changes in classification that have been made to date.

This consolidation of the 27 bulletins previously printed constitutes a volume of about 500 pages. The assembling and compiling of the information contained in those

bulletins is executed in the Classification Division and the proof sheets are sent to that division to be corrected and revised. The copy for this volume is sent to the Government Printing Office, and 2,500 copies were printed at a cost of $4,732.54. Of this edition of 2,500 copies, all of which are in the custody of the Publication Division, the necessary number is furnished to the examining corps and the balance is on sale at 50 cents a copy. This publication was placed on sale in August, 1912, and up to the present time the receipts from the sales have not, of course, reached a sum that would be worthy of consideration.

19. Briefs for the Commissioner of Patents.

These briefs are printed whenever they are required for court use. The matter to be printed is prepared by the law examiners of the Patent Office and the printing is ordered through the Issue and Gazette Division.

During the fiscal year ended June 30, 1912, there were 19 briefs published, and of each brief 35 copies were printed and bound in paper. The number of pages in each brief will vary according to the nature of the case at bar.

The total cost for printing the briefs of the Commissioner of Patents during the past fiscal year was $442.65.

20. Patent Laws with Annotations.

In order to meet the demand for information relating to the legal requirements in patent procedure, there is compiled and published in convenient form all the patent laws enacted by Congress.

The publication of this, as well as other laws and rules governing the conduct of affairs of the Patent Office is required by the act of January 12, 1895, which provides that:

"* * * Sixth. Pamphlet copies of the rules of practice, pamphlet copies of the patent laws, and pamphlet copies of the laws and rules relating to trade-marks and labels, and circulars relating to the business of the office, all in such numbers as may be needed for the business of the office. * * *"

The publication of the patent laws appears in pamphlet form, there being about 55 pages, of octavo form, which are bound in paper covers. As often as it becomes necessary, a revised edition of this pamphlet is printed in order to have available at all times the latest changes in the patent laws.

During the fiscal year ended June 30, 1912, one edition of this publication appeared, of which 5,000 copies were printed. The cost for printing was $110.45.

The "Patent Laws with Annotations" are distributed free by the Publication Division.

21. United States Statutes Concerning Registration of Trade-Marks.

The information here published is a compilation of all laws, rules, and regulations relating to the registration of trade-marks. It is printed in pamphlet form, and revised editions appear as often as required for having at hand the latest information of this kind.

The latest edition of this pamphlet contained 53 octavo pages, wire stitched and paper bound, and the total cost for the 10,000 copies printed was $356.15.

The entire edition is distributed by the Publication Division upon request, no charge being made for copies of this publication.

22. Trade-Mark Law Amendment.

The printing of this amendment, which requires only one page of octavo form, was made necessary to meet the public demand for this information, and as the amendment was made to the statutes relative to trade-marks subsequent to the publishing

of the pamphlet containing all laws upon that subject, it was printed separately. In the next reprint of the pamphlet containing the trade-mark law this amendment will be included.

To print the 4,000 copies ordered of this amendment the cost was $4.79. This single sheet is mailed to each person requesting a copy of the trade-mark laws. The distribution is made by the Publication Division.

23. United States Statutes Concerning Registration of Prints and Labels.

This is a pamphlet giving all the laws and rules of the Patent Office with regard to the registration of prints and labels.

It is reprinted at varying intervals of time and is distributed free upon request being made to the Publication Division.

The last edition of this pamphlet appeared in March, 1912, and contained 15 pages. Of this edition 3,000 copies were printed at a cost of $27.60.

24. Rules of Practice in the United States Patent Office.

For the proper guidance of attorneys and inventors having business before the Patent Office, there are printed in pamphlet form all the rules which have been adopted and approved by the Secretary of the Interior. The rules are designed to be in strict accordance with the Revised Statutes relating to the grant of patents for inventions, and are published for gratuitous distribution.

These printed rules comprise 122 octavo pages, wire stitched and paper bound. The revised edition of this pamphlet, which is dated July 17, 1907, has been reprinted six times, the last reprint being of January 15, 1912. At that time 10,000 copies were printed at a cost of $437.29.

25. Extract from Rules of Practice (Pertaining to Assignments).

In order to avoid making a distribution of the pamphlet giving a complete compilation of the rules of practice in the Patent Office, there have been compiled and printed certain extracts from such rules which relate to special phases of the work. The purpose served by printing this extract is to avoid the distribution of a large number of copies of the "Rules of Practice" which otherwise would have to be distributed.

The extract from the rules pertaining to assignments consists of eight pages. It is printed in octavo form and is without cover. During the fiscal year ended June 30, 1912, there were printed 2,000 copies of this extract, which involved an expenditure of $23.82. Copies of the extract are sent out by the Publication Division on request.

26. Extract from Rules of Practice (Registry of Attorneys).

This extract consists of four pages of the same size and printed in the same manner as the one just described.

The contents of this extract cover such points as have already been published in the publication entitled "Rules of Practice in the Patent Office," and are issued in this separate form in order to meet the needs of those persons who require information of this particular kind. There were 1,500 copies of this extract printed during the fiscal year ended June 30, 1912, for which the cost was $8.79.

The extract is furnished to all persons upon request being made to the Publication Division.

27. Roster of Registered Attorneys.

This is one of the two pamphlets published by the Patent Office for the purpose of having a directory or roster of all attorneys entitled to practice before the Patent Office.

of the pamphlet containing all laws upon that subject, it was printed separately. In the next reprint of the pamphlet containing the trade-mark law this amendment will be included.

To print the 4,000 copies ordered of this amendment the cost was $4.79. This single sheet is mailed to each person requesting a copy of the trade-mark laws. The distribution is made by the Publication Division.

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This directory is published in pamphlet form, having a paper cover, and for the revised edition, which appeared January 2, 1907, there were 123 pages. This edition was reprinted in May, 1910, at which time 2,500 copies were printed at a cost of $483.50. This roster sells for the price of 20 cents, and during the fiscal year ended June 30, 1912, the receipts from sales amounted to $48.20.

28. Attorneys Admitted to Practice Before the United States Patent Office.

This is a supplement to the roster published in 1907 and was compiled and issued with the idea in view of bringing up to date the directory of attorneys entitled to practice before the Patent Office. This supplement contains 31 pages, is bound in paper, and is sold for the price of 25 cents per copy. There were 1,000 copies printed, costing $109.15, and the receipts from sales have amounted to $38.50.

29. Manual of Classification of the German Patent Office.

This publication is in the nature of a departure in the usual publication work of the Patent Office in that it is a reproduction of a German publication. The reason for translating and printing the volume for the use of the examining corps of the Patent Office is found in the fact that it is a volume of considerable value in the Patent Office work.

The translation and preparation of the German publication was made in the Classification Division of the Patent Office and the proof was read in that division.

The publication is printed in royal octavo form, bound in paper and comprises 141 pages. The contents embrace the scheme of classification in use at the present time in the German Patent Office and a brief index which refers to classes and subclasses.

Of this publication 2,000 copies were printed, a large number of which were distributed to the examining corps of the Patent Office, and the balance placed on sale by the Division of Publications at the price of $1 per volume. The cost for printing was $687.29 and the receipts from sales amounted to $145.

30. Price List of Publications of the Patent Office.

This is nothing but a folder or leaflet containing 10 pages, which gives all the necessary information. relative to the character of the publications issued by the Patent Office, the cost per copy, and such other pertinent information as would be of value to anyone who wished to obtain the printed matter emanating from the Patent Office. It can be obtained only by making application to the Publication Division. This leaflet is printed in editions of 2,000 copies, for which the cost is $26.83.

31. Extract from Price List.

This is also a leaflet or folder, the contents of which are extracted from the price list of publications. This particular extract contains information especially devoted to the manner of ordering manuscripts and photographic copies of patents, and is printed in this form in order to meet the needs of those persons who want only this class of information. The last edition of this extract appeared in January, 1911, when 2,000 copies were printed. The cost for publishing this extract was $10.61.

Conclusion.

The foregoing detailed description of the various publications of the Patent Office is an attempt to give a general idea of the extent to which printed matter is handled by that office.

In order to show at a glance the various important facts pertaining to each publication of the Patent Office, especially with regard to the cost and amount received from sales, there is included in this report a recapitulation or table which shows these facts.

APPENDIX I.

STATEMENT OF THE BUSINESS OF THE PATENT OFFICE.

STATEMENT OF THE BUSINESS OF THE PATENT OFFICE.

The following tables from the report submitted to Congress by the Commissioner of Patents for the year ended December 31, 1911, and a copy of his report for the year ended June 30, 1912, are published for the purpose of making available, in connection with this report, the latest statistics concerning the business of the office and the increase in applications:

RECEIPTS OF THE PATENT OFFICE FOR THE CALENDAR YEAR 1911.

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any source whatever.

Applications:	
Cash received	$1,738,154.00
Cash refunded	6,257.00
Net cash	1,731,897.00
Certificates of deposit	51,685.00
Total cash and certificates	1,783,582.00
Copies:	
Cash received	185,627.52
Cash refunded	7,141.97
Net cash	178,485.55
Certificates of deposit	1,169.65
Total cash and certificates	179,655.20
Recording assignments:	
Cash received	32,398.86
Cash refunded	1,742.63
Net cash	30,656.23
Certificates of deposit	169.00
Total cash and certificates	30,825.23
Official Gazette:	
Cash received	18,650.85
Cash refunded	2.25
Net cash	18,648.60
Certificates of deposit	
Total cash and certificates	18,648.60
Registration of prints and labels:	
Cash received	7,649.00
Cash refunded	1,062.00
Net cash	6,587.00
Certificates of deposit	60.00
Total cash and certificates	6,647.00

Court costs:	
Cash received	$30.00
Cash refunded	
Net cash	30.00
Certificates of deposit	
Total cash and certificates	30.00
Aggregates:	
Cash received	1,982,510.23
Cash refunded	16,205.85
Net cash	1,966,304.38
Certificates of deposit	53,083.65
Total cash and certificates	2,019,388.03

EXPENDITURES.

Amounts expended under the several appropriations from Jan. 1 to Dec. 31.

	1910	1911
Salaries	$1,252,450.99	$1,292,716.26
Scientific library	1,743.01	2,253.65
International Union for Protection of Industrial Property	618.36	617.60
Stationery	10,621.36	10,075.40
Postage on foreign matter	1,240.00	935.00
Furniture, carpets, ice, telephones, washing towels, and sundries	14,649.84	17,484.15
Law library	383.18	482.38
Photolithographing:		
Paid contractor	142,837.35	120,128.85
Paid Public Printer for old specifications		16,999.99
Printing and binding, for Official Gazette, indexes, printing specifications, and miscellaneous work	578,263.39	491,976.63
Rent for storage for models and removal of same	2,874.00	
Defending suits, etc	30.46	20.00
Total	2,005,711.94	1,953,689.91

RECEIPTS AND EXPENDITURES.

Receipts from all sources	$2,019,388.03
Expenditures	1,953,689.91
Surplus	65,698.12

Surplus earnings of the Patent Office, deposited in the Treasury of the United States.

Amount of total net surplus in Treasury, Jan. 1, 1911	$6,998,227.64
Net surplus for the year 1911	65,698.12
Total net surplus, Dec. 31, 1911	7,063,925.76

SUMMARY OF THE BUSINESS OF THE PATENT OFFICE.

Applications for patents for inventions	67,370
Applications for patents for designs	1,534
Applications for reissues of patents	217
Total	69,121

Applications for registration of trade-marks	7,085
Applications for registration of labels	969
Applications for registration of prints	337
Disclaimers filed	10
Appeals on the merits	1,693
Total	10,094
Patents issued, including designs	33,927
Patents reissued	157
Total	34,084
Trade-marks registered	4,205
Labels registered	659
Prints registered	248
Total	5,112
Patents expired during the year	19,875
Applications forfeited for nonpayment of final fees	7,028
Applications allowed, awaiting final fees	11,803
Trade-mark applications passed for publication	4,767

PATENTS ISSUED.

Patents issued to citizens of the United States, with the ratio of population to each patent granted.

States and Territories.	Patents and designs.	One to every—	States and Territories.	Patents and designs.	One to every—
Alabama	163	13,117	North Dakota	132	4,372
Arkansas	135	11,663	Ohio	2,233	2,135
California	1,575	1,516	Oklahoma	235	7,052
Colorado	477	1,675	Oregon	246	2,735
Connecticut	845	1,319	Pennsylvania	2,919	2,626
Delaware	56	3,613	Rhode Island	315	1,723
Florida	104	7,237	South Carolina	65	23,314
Georgia	224	11,647	South Dakota	109	5,357
Idaho	105	3,101	Tennessee	195	12,484
Illinois	3,172	1,778	Texas	591	6,593
Indiana	726	3,720	Utah	103	3,624
Iowa	583	3,816	Vermont	61	5,835
Kansas	382	4,427	Virginia	226	9,122
Kentucky	240	9,541	Washington	410	2,785
Louisiana	165	10,039	West Virginia	196	6,230
Maine	142	5,228	Wisconsin	703	3,320
Maryland	272	4,762	Wyoming	26	5,614
Massachusetts	1,842	1,828	Alaska	5	12,871
Michigan	1,035	2,715	Arizona	41	4,964
Minnesota	475	4,370	Canal Zone	9	.....
Mississippi	113	15,904	District of Columbia	239	1,385
Missouri	945	3,486	Hawaii	19	10,100
Montana	112	3,357	New Mexico	50	6,546
Nebraska	318	3,749	Philippine Islands	6	.....
Nevada	39	2,099	Porto Rico	7	159,716
New Hampshire	81	5,316	United States Army	10	.....
New Jersey	1,360	1,866	United States Navy	16	.....
New York	4,777	1,908			
North Carolina	191	11,551	Total	[1] 29,801	.....

[1] Not including 157 reissues and 68 patents withdrawn.

Patents granted to citizens of foreign countries.

Algeria	1	Mexico	42
Argentina	6	Netherlands	17
Austria-Hungary	140	Newfoundland	1
Belgium	37	New South Wales	29
British West Indies	3	New Zealand	38
Brazil	3	Nicaragua	1
Canada	554	Norway	36
Cape Colony	4	Orange River Colony	1
Chile	2	Persia	1
Colombia	1	Queensland	5
Cuba	10	Roumania	2
Denmark	32	Russia	49
Egypt	2	Scotland	47
England	935	South Australia	3
Ecuador	1	Spain	18
France	347	Sweden	92
Germany	1,320	Switzerland	108
Greece	1	Tasmania	3
Guatemala	1	Transvaal	28
India	6	Venezuela	2
Ireland	11	Victoria	34
Italy	62	West Australia	7
Japan	12		
Java	1	Total	4,058
Luxemburg	2		

The following tables present a comparative statement of the business of the Patent Office since the enactment of the statute of 1836, and exhibit in detail the business of the office during the last calendar year:

Comparative statement of the business of the office from 1837 to 1911, inclusive.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1837	.....	.....	435	$29,289.08	$33,506.98	.....
1838	.....	.....	520	42,123.54	37,338.92	$4,784.62
1839	.....	.....	425	38,019.97	34,543.51	3,476.46
1840	765	228	473	38,056.51	39,020.67	.....
1841	847	312	495	40,413.01	52,666.87	.....
1842	761	291	517	36,505.63	31,241.43	5,264.20
1843	819	315	519	35,315.81	30,776.96	4,538.85
1844	1,045	880	497	42,509.26	36,344.53	6,164.73
1845	1,246	452	503	51,076.14	39,395.65	11,680.49
1846	1,272	448	638	50,264.16	46,158.71	4,105.45
1847	1,531	533	569	63,111.19	41,878.35	21,232.84
1848	1,628	607	653	67,576.69	58,905.84	8,670.85
1849	1,955	595	1,077	80,752.78	77,716.44	3,036.34
1850	2,193	602	993	86,927.05	80,100.95	6,826.10
1851	2,258	760	872	95,738.61	86,916.93	8,821.68
1852	2,639	996	1,019	112,056.34	95,916.91	16,139.43
1853	2,673	901	961	121,527.45	132,869.83	.....
1854	3,324	868	1,844	163,789.84	167,146.32	.....
1855	4,435	906	2,013	216,459.35	179,540.33	36,919.02
1856	4,960	1,024	2,505	192,588.02	199,931.02	.....
1857	4,771	1,010	2,896	196,132.01	211,582.09	.....

Comparative statement of the business of the office from 1857 to 1911, inclusive—Contd.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1858	5,364	943	3,710	$203,716.16	$193,193.74	$10,522.42
1859	6,225	1,079	4,538	245,942.15	210,278.41	35,663.74
1860	7,653	1,084	4,819	256,352.59	252,820.80	3,531.79
1861	4,643	700	3,340	137,354.44	221,491.91	.....
1862	5,038	824	3,521	215,784.99	182,840.39	32,944.06
1863	6,014	787	4,170	195,593.29	189,414.14	6,179.15
1864	6,972	1,063	5,020	240,919.98	229,868.00	11,051.98
1865	10,664	1,932	6,616	348,791.84	274,199.34	74,592.50
1866	15,269	2,723	9,450	495,665.38	361,724.28	133,941.10
1867	21,276	3,597	13,015	646,581.92	639,263.32	7,318.60
1868	20.445	3,705	13,378	681,565.86	628,679.77	52,886.09
1869	19,271	3,624	13,986	693,145.81	486,430.74	206,715.07
1870	19,171	3,273	13,321	669,456.76	557,147.19	112,309.57
1871	19,472	3,366	13,033	678,716.46	562,091.64	116,624.82
1872	18,246	3,090	13,590	699,726.39	665,595.00	34,131.39
1873	20,414	3,248	12,864	703,191.77	691,178.98	12,012.79
1874	21,602	3,181	13,599	738,278.17	679,288.41	58,959.76
1875	21,638	3,094	14,837	743,453.36	721,657.71	21,795.65
1876	21,425	2,697	15,595	757,987.65	652,542.60	105,445.05
1877	20,308	2,809	14,187	732,342.85	613,152.62	119,190.23
1878	20,260	2,755	13,444	725,375.55	593,082.89	132,292.66
1879	20,059	2,620	13,213	703,931.47	529,638.97	174,292.50
1880	23,012	2,490	13,947	749,685.32	538,865.17	210,820.15
1881	26,059	2,406	16,584	853,665.89	605,173.28	248,492.61
1882	31,522	2,553	19,267	1,009,219.45	683,867.67	325,351.78
1883	34,576	2,741	22,383	1,146,240.00	675,234.86	471,005.14
1884	35,600	2,582	20,413	1,075,798.80	970,579.76	105,219.04
1885	35,717	2,552	24,233	1,188,089.15	1,024,378.85	163,710.30
1886	35,968	2,513	22,508	1,154,551.40	992,503.45	162,047.95
1887	35,613	2,622	21,477	1,144,509.60	994,472.22	150,037.38
1888	35,797	2,251	20,506	1,118,516.10	973,108.78	145,407.32
1889	40,575	2,481	24,158	1,281,728.05	1,052,955.96	228,772.09
1890	41,048	2,311	26,292	1,340,372.66	1,099,297.74	241,074.92
1891	40,552	2,408	23,244	1,271,285.78	1,139,713.35	131,572.43
1892	40,753	2,290	23,559	1,286,331.88	1,110,739.24	175,592.59
1893	38,473	2,247	23,769	1,242,871.64	1,141,038.45	101,833.19
1894	38,439	2,286	20,867	1,187,439.58	1,100,047.12	87,392.46
1895	40,680	2,415	22,057	1,245,246.93	1,106,389.49	138,857.44
1896	43,982	2,271	23,373	1,324,059.83	1,113,413.71	210,646.12
1897	47,905	2,176	23,794	1,375,641.72	1,122,843.13	252,798.59
1898	35,842	1,659	22,267	1,137,734.48	1,136,196.20	1,538.28
1899	41,443	1,716	25,527	1,325,457.03	1,211,783.73	113,673.30
1900	41,980	1,731	26,499	1,350,828.53	1,260,019.62	90,808.91
1901	46,449	1,842	27,373	1,449,398.16	1,297,385.64	152,012.52
1902	49,641	1,851	27,886	1,552,859.08	1,393,345.54	159,513.54
1903	50,213	1,771	31,699	1,642,201.81	1,448,645.81	193,156.00
1904	52,143	1,808	30,934	1,657,326.53	1,476,000.38	181,326.15
1905	54,971	1,896	30,399	1,806,758.14	1,479,633.22	327,124.92
1906	56,482	1,885	31,965	1,790,921.38	1,554,891.20	236,030.18
1907	58,762	1,967	36,620	1,910,618.14	1,631,458.36	279,159.78
1908	61,475	2,110	33,682	1,896,847.67	1,712,303.42	184,544.25
1909	65,839	1,948	37,421	2,042,828.14	1,955,151.14	87,677.00
1910	64,629	970	35,930	2,025,536.69	2,005,711.94	19,824.75
1911	69.121	.....	34,084	2,019,388.03	1,953,689.91	65,698.12

Statement showing the number of the first patent, design patent, and reissued patent, and the number of the first certificate of registration of a trade-mark, label, and print issued in each calendar year since July 28, 1836, when the present series of numbers of letters patent commenced, together with the total number of each issued during the year.

[The number of patents granted prior to the commencement of this series of numbering (July 28, 1836) was 9,957.]

Calendar year.	Number of first patent and certificate issued in each calendar year.						Number of patents and certificates of registration issued during each calendar year							
	Patents.	Designs.	Reissues.	Trade-marks.	Labels.	Prints.	Patents.	Designs.	Reissues.	Total patents.	Trade-marks.	Labels.	Prints.	Total certificates.
1836 (July 28)	1						100							
1837	110						426							
1838	546		1				515		6					
1839	1,061		7				404		13					
1840	1,465		20				458		10					
1841	1,923		30				490		6					
1842	2,413		36				488		13					
1843	2,901	1	49				494	14	11	519				
1844	3,395	15	60				478	12	7	497				
1845	3,873	27	67				475	17	11	503				
1846	4,348	44	78				565	59	15	639				
1847	4,914	103	91				496	60	14	569				
1848	5,409	163	105				584	46	23	653				
1849	5,903	209	128				988	49	30	1,067				
1850	6,961	258	158				884	83	26	993				
1851	7,865	341	184				757	90	25	872				
1852	8,622	431	209				890	109	20	1,019				
1853	9,512	540	229				846	86	29	961				
1854	10,358	626	258				1,759	57	28	1,844				
1855	12,117	683	286				1,892	70	51	2,013				
1856	14,009	753	337				2,315	107	83	2,505				
1857	16,324	880	420				2,686	113	97	2,896				
1858	19,010	973	517				3,467	102	126	3,695				
1859	22,477	1,075	643				4,165	106	231	4,504				
1860	26,642	1,183	674				4,363	183	232	4,778				
1861	31,005	1,366	1,106				3,040	142	147	3,329				
1862	34,045	1,508	1,253				3,221	195	116	3,532				
1863	37,266	1,703	1,369				3,781	176	227	4,184				
1864	41,047	1,[illegible]	1,596				4,638	139	248	5,025				
1865	45,685	2,018	1,844				6,099	221	296	6,616				
1866	51,784	2,239	2,140				8,874	294	290	9,458				
1867	60,658	2,533	2,430				12,301	325	400	13,026				
1868	72,959	2,858	2,830				12,544	446	420	13,410				
1869	85,503	3,304	3,250				12,957	506	534	13,997				
1870	98,460	3,810	3,784	1			12,157	737	439	13,333	121			121
1871	110,617	4,547	4,223	122			11,667	905	464	13,056	486			486
1872	122,304	5,452	4,687	606			12,200	884	529	13,613	491			491
1873	134,504	6,236	5,216	1,099			11,616	747	501	12,864	492			492

***Statement showing the number of the first patent, design patent, and reissued patent, and the number of the first certificate of registration of a trade-mark, label, and print issued in each calendar year since July 28, 1836, etc.*—Continued.**

Calendar year.	Number of first patent and certificate issued in each calendar year.						Number of patents and certificates of registration issued during each calendar year.							
	Patents.	Designs.	Reissues.	Trade-marks.	Labels.	Prints.	Patents.	Designs.	Reissues.	Total patents.	Trade-marks.	Labels.	Prints.	Total certificates.
1874	146,120	7,083	5,717	1,591	1		12,230	886	483	13,599	559	[illegible]	..	791
1875	158,350	7,969	6,200	2,150	233		13,291	915	631	14,837	1,138	232	..	1,370
1876	171,641	8,[illegible]	6,831	3,283	455		14,172	802	821	15,595	959	472	..	1,431
1877	185,813	9,686	7,452	4,247	937		12,920	699	568	14,187	1,216	392	.. .	1,608
1878	198,733	10,385	8,020	5,463	1,329		12,345	590	509	13,444	1,455	[illegible]	..	1,947
1879	211,078	10,[illegible]	8,539	6,918	1,821		12,133	592	488	13,213	872	355	....	1,227
1880	223,211	11,567	9,017	7,790	2,176		12,926	515	506	13,947	849	203	..	552
1881	336,137	13 082	9,523	8,139	2,379		15,648	585	471	16,584	834	202	..	1,036
1882	251,685	12 647	9,994	8,973	2,581		18,135	861	271	19,267	947	304	.	1,251
1883	269,820	13,508	10,265	9,920	2,885		21,196	1,020	167	22,383	902	906		1,808
1884	291,016	14 528	10,432	10,822	3,791		19,147	1,150	116	20,413	1,021	513	..	1,534
1885	310,163	15,678	10,548	11,843	4,304		23,331	773	129	24,233	1,067	391	....	1,458
1886	333,494	16,451	10,677	12,910	4,695		21,797	595	116	22,508	1,029	378	.	1,407
1887	355 291	17,046	10,793	13,939	5,073		20,429	949	99	21,477	1,133	380	....	1,513
1888	375,720	17,995	10,892	15,072	5,453		19,585	835	[illegible]	20,506	1,069	327	. .	1,396
1889	395,305	18,830	10,978	16,131	5,780		23,360	723	75	24,158	1,229	319	....	1,548
1890	418,665	19,553	11,053	17,360	6,099		25,822	596	84	26,292	1,415	304	..	1,719
1891	443,987	20,439	11,137	18,775	6,403		22,328	836	80	23,244	1,762	137	.	1,899
1892	466,315	21,275	11,217	20,537	6,540		22,661	817	81	23,559	1,737	[1] 6	...	1,743
1893	488,976	22,092	11,298	22,274	None	1	22,[illegible]	902	99	23,709	1,677	None.	2	1,679
1894	511,744	22,994	11,397	23,951	None.	3	19,[illegible]	928	64	20,857	1,806	None.	4	1,810
1895	531 619	23,922	11,461	25,757	None.	7	20,883	1,115	59	22,057	1,829	None.	3	1,832
1896	552 502	25 037	11,520	27 586	6,646	10	21,867	1,445	61	23,273	1,813	1	32	1,846
1897	574,309	26 482	11,581	29,399	6,547	42	22,098	1,631	65	23,794	1,671	14	16	1,701
1898	596,467	28,113	11,646	31,070	6,561	58	20,404	1,803	60	22,267	1,238	200	35	1,473
1899	616,871	29,916	11,706	32,308	6,751	93	23,296	2,139	92	25,527	1,649	511	100	2,260
1900	640,167	32,055	11,796	33,957	7,272	193	24,680	1,758	81	26,499	1,721	737	93	2,551
1901	664,827	33,813	11,879	35,678	8,009	286	25,558	1,734	81	27,373	1,928	878	159	2,965
1902	690 385	35 547	11,960	37,606	8,887	445	27,136	640	110	27,886	2,006	767	158	2,931
1903	717,521	36 187	12,070	39,612	9,654	603	31,046	536	117	31 699	2,186	990	270	3,446
1904	748 567	36 723	12,189	41,798	10,644	873	30,267	557	110	30,934	2,158	1,114	297	3,569
1905	778 834	37,280	12,299	43,956	11,758	1,170	29,784	[illegible]	129	30,399	4,490	830	359	5,679
1906	808 618	37,766	12,428	48,446	12,585	1,529	31,181	626	159	31,965	10,568	709	656	11,933
1907	839,799	38,391	12,587	59,014	13,297	1,874	35,880	[illegible]	151	36,620	7,878	667	315	8,860
1908	875 679	38,980	12,738	66,892	13,964	2,189	32,757	757	168	33,682	5,191	618	220	6,029
1909	906,436	39,737	12,906	72,163	14,562	2,409	36,574	687	160	37 421	4,184	492	148	4,824
1910	945,010	40,424	13,066	72,267	15,074	2,557	35,166	639	123	35,930	4,239	370	120	4,729
1911	980,178	41,063	13,189	80,506	15,444	2,677	32,917	1,010	157	34,084	4,205	659	248	5,113

[1] Registration of labels practically suspended May 27, 1891, under decision of the United States Supreme Court in Higgins et al. v Keuffel et al. (55 O. G., 1139), with the registration of No. 6,545, June 14, 1892. Resumed June 9, 1896, with the registration of No. 6,546.

Number of patents issued by the United States and foreign countries from the earliest period to December 31, 1911.

[Foreign figures for 1911 estimated.]

Country.	To 1870, inclusive.	1871 to 1911.	Total.	Country.	To 1870, inclusive.	1871 to 1911.	Total.
Argentina	83	9,850	9,933	Luxemburg	.....	9,298	9,298
Australia	.....	10,542	10,542	Malta	.....	88	88
Austria	.....	70,463	70,463	Mauritius	113	288	401
Austria-Hungary	15,350	67,583	82,933	Mexico	22	11,113	11,135
Bahamas	.....	2	2	Netherlands	4,535	.....	4,535
Barbados	.....	147	147	Newfoundland	40	421	461
Belgium	35,044	213,156	248,200	New South Wales	236	11,740	11,976
Bolivia	42	65	107	New Zealand	109	14,345	14,454
Brazil	185	7,489	7,674	Norway	737	23,119	23,856
British Guiana	32	94	126	Paraguay	.....	91	91
British Honduras	1	19	20	Peru	.....	160	160
Canada	4,081	137,325	141,406	Portugal	245	7,165	7,410
Ceylon	58	739	797	Queensland	67	6,368	6,435
Chile	266	2,042	2,308	Russia	1,464	25,453	26,917
Colombia	.....	1,029	1,029	St. Helena	.....	4	4
Costa Rica	.....	64	64	South African Republics	.....	1,262	1,262
Cuba	.....	1,300	1,300	South Australia	123	6,221	6,344
Denmark	464	22,559	23,023	Spain	.....	46,915	46,915
Ecuador	.....	10	10	Straits Settlements	.....	290	290
Fiji Islands	.....	43	43	Sweden	1,629	33,696	35,325
Finland	112	4,364	4,476	Switzerland	.....	53,449	53,449
France	103.934	352,710	456,644	Tasmania	43	2,426	2,469
Germany	9,906	249,638	259,634	Transvaal	.....	2,900	2,900
Great Britain	53,408	389,627	443,035	Trinidad	6	220	226
Guatemala	.....	57	57	Tunis	.....	861	861
Hawaii	.....	148	148	Turkey	.....	2,060	2,060
Hongkong	.....	187	187	Uruguay	.....	400	400
Hungary	.....	50,474	50,474	Venezuela	.....	244	244
India	445	11,476	11,921	Victoria	822	12,463	13,285
Italy and Sardinia	4,723	102,179	106,902	West Australia	.....	3,524	3,524
Jamaica	22	231	253				
Japan	.....	21,191	21,191	Total foreign	238,437	2,003,658	2,242,095
Kongo Free State	.....	244	244	United States	120,573	902,478	[1]1,023,051
Leeward Islands	.....	25	25				
Liberia	.....	2	2	Grand total	359,010	2,906,136	3,265,146

[1] Including 9,957 patents issued prior to July 1, 1836.

The following comparison between the receipts, expenditures, applications filed, issues of the office, the printed copies sold, copies of records furnished, and the number of employees for the years ended, respectively, December 31, 1899, and December 31, 1911, illustrates the growth of the business of the Patent Office:

Class.	1899	1911	Increase.	Percentage of increase.
Receipts	$1,325,457.03	$2,019,388.03	$693,931.00	52.3
Expenditures	$1,211,783.73	$1,953,689.91	$741,906.18	61.2
Applications (including caveats in 1899)	45,990	77,512	31,522	68.5
Letters patent, design and reissue patents granted, and trade-marks, labels, and prints registered	27,787	39,196	11,409	41
Printed copies of patents sold	1,451,519	2,329,259	877,740	60.4
Price received	$50,201.11	$109,975.75	$59,774.64	119
Words written in copies of records furnished	13,575,650	27,186,100	13,610,450	100.2
Number of employees	663	939	276	41.6

Annual Report of the Commissioner of Patents to the Secretary of the Interior for the Fiscal Year Ended June 30, 1912.

Washington, D. C., *October 25, 1912.*

Sir: I have the honor to submit herewith the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1912:

Applications received during fiscal year ended June 30, 1912.

Applications for patents for inventions	69,236
Applications for patents for designs	1,775
Applications for reissues of patents	195
Applications for registration of trade-marks	7,238
Applications for registration of labels	941
Applications for registration of prints	362
Total applications	79,747
Disclaimers	12
Appeals on the merits	1,700
Total applications, disclaimers, and appeals	81,459

Applications for patents for inventions, year ended June 30.

1903	49,199	1908	58,527
1904	50,321	1909	62,800
1905	52,323	1910	63,365
1906	55,619	1911	65,154
1907	56,514	1912	69,236

Applications for patents, including reissues, designs, trade-marks, labels, and prints, year ended June 30.

1903	54,256	1908	68,441
1904	55,468	1909	73,026
1905	66,228	1910	72,533
1906	68,881	1911	74,677
1907	66,795	1912	79,747

Applications awaiting action.

Applications awaiting action on the part of the office, July 1, 1912	21,059

Applications awaiting action on the part of the office, year ended June 30.

1908	20,043	1911	17,809
1909	17,153	1912	21,059
1910	14,575		

Patents withheld and patents expired.

Letters patent withheld for nonpayment of final fees	6,970
Letters patent expired	19,634
Applications allowed, awaiting payment of final fees	14,415

Patents granted and trade-marks, labels, and prints registered.

Class.	1908	1909	1910	1911	1912
Letters patent	34,003	34,332	36,287	33,513	34,220
Design patents	748	721	629	777	1,148
Reissue patents	151	162	142	138	171
Trade-marks	6,135	4,547	4,342	3,791	4,635
Labels	636	779	176	576	625
Prints	279	231	59	181	268
Total	41,952	40,772	41,635	38,976	41,067

Receipts from all sources.

Applications, first fees	$1,029,900.00
Designs	32,170.00
Reissues	5,790.00
Trade-marks	71,606.00
Final fees	692,530.00
Appeals	19,175.00
Disclaimers	110.00
Coupons	48,453.30
Drawings	6,219.13
Recording assignments	47,184.98
Official Gazette and other publications	19,271.20
Labels	4,910.00
Prints	1,884.00
Court costs	15.00
Copies of patents [1]	49,752.85
Copies of records	65,221.94
Total	2,094,193.40
Less refundments on account of caveat fees and unapplied fees received during fiscal year 1910–11	133.90
Total receipts	2,094,059.50

[1] During the year copies of patents to the value of $114,808.95 were furnished, $65,056.10 worth of copies being furnished upon coupons, many of which had been sold in preceding years.

Expenditures.

	Expended.	Estimated liabilities.	Total.
Salaries	$1,305,334.31	.....	$1,305,334.31
Scientific library	843.86	$1,648.54	2,492.40
Postage on foreign matter	733.56	.....	733.56
Stationery	10,394.90	.....	10,394.90
Ice	574.66	.....	574.66
Telephones	942.67	.....	942.67
Washing towels	133.23	.....	133.23
Furniture and sundries	11,534.84	2,014.40	13,549.24
Law library	203.35	261.90	465.25
Photolithographing, paid contractor	110,701.69	.....	110,701.69
Photographic printing, paid contractor	7,506.54	.....	7,506.54
Printing old specifications, paid Public Printer	21,791.77	.....	21,791.77
Printing and binding:			
Official Gazette and indexes	150,025.24	.....	150,025.24
Specifications	358,278.28	.....	358,278.28
Miscellaneous	35,121.70	.....	35,121.70
International Convention for Protection of Industrial Property	.....	750.00	750.00
Total	2,014,120.60	4,674.84	2,018,795.44

Receipts and expenditures.

Receipts from all sources	$2,094,059.50
Expenditures	2,018,795.44
Net surplus	75,264.06
Total net surplus to date	7,139,189.82

Comparative statement.

June 30—	Receipts	Expenditures.
1903	$1,591,251.04	$1,423,094.40
1904	1,663,879.99	1,469,124.40
1905	1,737,334.44	1,472,467.51
1906	1,811,297.84	1,538,149.40
1907	1,859,592.89	1,584,489.70
1908	1,874,180.75	1,606,292.01
1909	1,975,919.97	1,887,443.35
1910	2,022,043.26	1,953,549.76
1911	1,987,778.58	1,957,001.85
1912	2,094,059.50	2,018,795.44

As specified in the foregoing statement, there were received in the last fiscal year 69,236 applications for mechanical patents, 1,775 applications for designs, 195 applications for reissues, 7,238 applications for trade-marks, 941 applications for labels, and 362 applications for prints.

There were 35,539 patents granted, including reissues and designs, and 4,635 trade-marks, 625 labels, and 268 prints were registered.

The number of patents that expired was 19,634. The number of allowed applications which were by operation of law forfeited for nonpayment of the final fees was 6,970. The total receipts of the office were $2,094,059.50; the total expenditures were $2,018,795.44, and the net surplus of receipts over expenditures was $75,264.06. The

grand total of net surplus of receipts over all expenditures covered into the Treasury is now $7,139,189.82.

It will be noted from the foregoing tables that the volume of business has materially increased during the last fiscal year. The total number of applications for patents for invention, for designs, for reissue of patents, registration of trade-marks, registration of labels and registration of prints, disclaimers to patents, and appeals on the merits is 81,459. The total of all applications for the fiscal year immediately previous was 76,383 for the same period, which shows an increase of 5,076 applications received.

The number of applications for mechanical patents shows an increase of 4,082 over the previous fiscal year or an increase of 6.26 per cent and a percentage of increase for the 10 years since 1903 down to the present time of 40.72 per cent.

It will also be observed that the receipts of the office from fees for applications have been greater than in preceding years, which clearly indicates the very marked prosperity of the country, as the activities in inventions and all things pertaining to them are a sure barometer of the financial condition of the country.

The condition of this office is fairly good considering the great handicap represented by the insufficient force and inadequate salaries, and the want of sufficient room and proper equipment with which the work of the office can be carried on.

The number of appeals has also necessarily increased, consequent upon the increased volume of work. The number of cases appealed and heard and disposed of by the three appellate tribunals of the office and the Court of Appeals of the District of Columbia in patent cases is shown in the following table:

Appellate work.

Number of interferences declared	1,642
Number of interferences disposed of before final hearing	1,241
Number of interferences heard	239
Number of interferences disposed of	284
Number of interferences awaiting decision	54
Appeals to examiners in chief in interference cases	176
Ex parte appeals to examiners in chief	933
Total	1,109
Number of appeals in interference cases disposed of	143
Number of ex parte appeals disposed of	694
Total	837
Interference cases awaiting action	111
Ex parte cases awaiting action	532
Total	643
Appeals to commissioner in interference cases	100
Appeals to commissioner in opposition cases	13
Appeals to commissioner in cancellation cases	4
Ex parte appeals to commissioner	173
Interlocutory appeals to commissioner	245
Ex parte appeals in trade-mark cases	68
Total	603
Petitions to commissioner	2,600
Total	3,208

Number of cases disposed of by commissioner:	
Appeals in interference cases	110
Appeals in opposition cases	13
Appeals in cancellation cases	1
Ex parte appeals	174
Interlocutory appeals	243
Ex parte appeals in trade-mark cases	55
Total	596
Petitions to commissioner	2,599
Total	3,195
Appeals to Court of Appeals, District of Columbia:	
Ex parte cases	34
Interference cases	55
Opposition cases	4
Cancellation cases	2
Total	95

The affairs of the office have been conducted with the most rigid economy. At the last session of Congress I recommended that the library edition of specifications and drawings be abolished, as that publication is no longer desirable or useful. Congress repealed the law, and this has resulted in a saving annually of about $65,000.

Much has been accomplished in the work of the classification of patents. In regard to the scientific library, it is hardly necessary to refer to the lack of space, lack of funds, and also of a sufficient number of employees to satisfactorily perform all the work required; these conditions have long been apparent to you.

Since January 10, 1912, 3,000 volumes have been sent to the Government Printing Office bindery. Previously the yearly average did not reach 1,000 volumes. There are now in the library more than 6,000 volumes so be bound, rebound, or repaired at a probable cost of not less than $20,000, and I believe if progress in this work be not interrupted it can be finished in two years.

The library appropriation of $2,500, of which nearly $1,000 must be used to pay transportation of United States patents to foreign countries, is inadequate to pay for current subscriptions to periodicals and new books and should be large enough to permit purchase of every valuable addition to scientific and technical literature germane to the purposes of the library.

Of greatest importance to all concerned is the scientific index of periodicals, which, begun more than 20 years ago, now requires careful revision in order to preserve its effectual use and meet the demands of progress in all the arts, notably electricity, and other classes prominent in the world of invention to-day. The present unsatisfactory state of this index may well be expected, when no time has been given to revision and when those doing the work are not fully skilled in all the arts represented, although their training through experience has done much to qualify them for this line of work.

A great saving of time has been effected by bringing to the library the triplicate set of French patents and arranging them in order of the French patent classification, which, though not perfect, is far better than a numerical arrangement for searches. These French triplicates have been stored in the galleries since 1903. The German triplicates still remain in these galleries and should also be brought to the library for classification. When the new book stacks are placed, I shall make every effort to have these German patents classified as the French patents now are. About 50,000

German patents, the first of the issue, are missing and can be obtained from the German patent office at a cost of about $1,500. This classification will save time, labor, and wear and tear of expensively bound volumes, as it is certain that did we not have the Abridgments of British Patents many volumes of inestimable value would have been badly damaged by constant use. All searchers agree that the classified volumes are much to be preferred to those arranged numerically or chronologically.

The force of the library, composed in greater part of clerks far above the average in education and mental ability, has been working under most discouraging conditions and has welcomed such change as has been lately effected in the library conditions.

About 5,000 books considered to be of no real value have been removed from the library. This removal was necessary to provide room for the increasing additions of new books more in demand.

Though much has been accomplished during the past six months, it is only a fraction of what should be done to make conditions meet the requirements of the library.

The shelves in the reading room and balcony are unspeakably dirty, and we have no adequate force of laborers for such work. All the alcoves are poorly yet expensively lighted, and there is most of the time a great amount of unnecessary and distracting noise from the corridors and galleries.

In view of the fact that the Committee on Patents, at the last session of Congress, unanimously reported out House joint resolution 337, looking to a thorough investigation of the Patent Office as to its needs and condition, and requesting the President to instruct his Commission on Economy and Efficiency to perform the investigation called for by the resolution, I do not deem it necessary or proper for me to reiterate at this time any previous recommendation or to make any new ones that might suggest themselves. The commission is now actively engaged in the investigation of all the branches of the office and inquiring into and considering all recommendations previously made by me in my reports to the Secretary and to Congress and will make its report to the Congress on December 10, 1912.

Respectfully submitted.

EDWARD B. MOORE, *Commissioner of Patents.*

COMPTROLLER'S DECISION.

The following decision of the Comptroller of the Treasury, rendered November 23, 1911 (18 Comp. Dec., 368), with reference to the practice of the financial clerk of the Patent Office in refunding balances due to persons having business with the office, and requiring that after January 1, 1912, all refundments of patent fees to the payer or depositor should be made through a settlement of the Auditor for the Interior Department upon certificate of the Commissioner of Patents, is given in full below:

PATENT OFFICE DEPOSITS, PROCEDURE, AND REFUNDMENTS.

All moneys paid at the Patent Office as fees, from any source, for any purpose, are required to be deposited in the United States Treasury, without reservation or deduction, for refundment or any other purpose, under section 4935, Revised Statutes.

Deposits of moneys as patent fees by individuals directly with the Treasurer of the United States, or with some assistant treasurer or designated depositary, should be covered into the Treasury to the credit of the Treasurer on his general account and not as heretofore to the credit of the Commissioner of Patents.

For such deposit certificates of deposit will issue in triplicate, and the depositary should immediately send the original to the Secretary of the Treasury, the duplicate to the Commissioner of Patents, and deliver the triplicate to the depositor.

Refundment of patent fees to the payer or depositor should be made only in pursuance of a settlement made by the Auditor for the Interior Department, upon certi-

ficate of the commissioner, from the permanent indefinite appropriation for refundment of patent fees, as provided in section 4936, Revised Statutes.

The amount of deposits as patent fees made by individuals directly with the Treasurer, some assistant treasurer, or designated depositary should not be included in the accounts of the Commissioner of Patents rendered to and settled by the Auditor for the Interior Department.

DECISION BY COMPTROLLER TRACEWELL, NOVEMBER 23, 1911.

I have received a letter from the Auditor for the Interior Department, dated June 27, 1911, as follows:

"The account of the Commissioner of Patents for 'Receipts of Patent Office fees' for the period ended May 4, 1911, settled by my certificate No. 5391, wherein a debit balance of $315.35 is declared in favor of the United States, and a credit balance of a like sum is certified to be due the commissioner, is herewith transmitted for your consideration and such action in the premises as you may deem necessary to close the account on the books of the Treasury.

"The commissioner rendered a final account under his old bond for the period including May 4, 1911, the date next preceding the date of the approval of his new bond, and it will be observed that while his account current shows no balance due the United States, there still remain, to be adjusted by proper entries to close the account, debit and credit balances of $315.35, which amount represents outstanding and unused certificates of deposit for Patent Office fees.

"This condition arises from the fact that under the present form of stating the account credit has been given the commissioner on Treasury warrants issued for deposits made with the assistant treasurers and national-bank depositaries on account of patent fees, in excess of the amount charged to him as miscellaneous revenues received. On the other hand, the commissioner has been charged under trust funds with the aggregate amount deposited as aforesaid for patent fees, but credited only with the aggregate amount of the certificates of deposit presented at the Patent Office. It will also be noted that while under section 4935, Revised Statutes, these patent fees were paid to the assistant treasurers of the United States and to the national-bank depositaries, they have been covered into the Treasury to the personal credit of the Commissioner of Patents, although no portion of the money represented by these deposits was ever received at the Patent Office.

"Your attention is further directed to the fact that all money received at the Patent Office, instead of being paid into the Treasury as received, without abatement, as required by section 4935, Revised Statutes, is deposited in a local bank (National Bank of Washington) in the name of Frank D. Sloat, financial clerk of the Patent Office, subsequently deposited by him to the credit of the Treasurer of the United States, and then covered into the Treasury to the personal credit of the Commissioner of Patents. This office does not, however, receive a copy of the monthly depositary statement required by paragraphs 21 and 22 of Treasury Circular 52 of 1907.

"In view of all of which I respectfully request that, in the exercise of the authority with which you are clothed by section 5 of the act of July 31, 1894, you will prescribe the forms for keeping, rendering, and settling the accounts of the Commissioner of Patents for deposits made on account of Patent Office fees under the provisions of section 4935, Revised Statutes. Pending your consideration of this matter no action will be taken here with respect to the settlement of the account of the commissioner under his bond approved May 5, 1911."

The auditor's letter raises the question of the proper method of keeping, rendering and stating the accounts of financial transactions in the Patent Office, involving consideration of present methods and questions of the legality of practices pursued.

Section 4934, Revised Statutes, prescribes the fees to be paid by applicants for patents, etc. Section 4935, hereinafter quoted, provides for payment of fees to the Commissioner of Patents, or deposit of same with Treasurer, assistant treasurers, or other depositaries, and for the disposition of moneys received by the commissioner. Section 4936, also hereinafter quoted, provides for repayment or refundment of moneys paid by mistake.

So far as indicated by the account presented, it appears that more than 95 per cent of all fees are paid to the Commissioner of Patents and less than 5 per cent by deposit with the Treasurer, assistant treasurers, and designated depositaries.

Payments of the former class are made to the financial clerk or pass into his possession. They are of two kinds, viz, payments over the counter in his office, termed "hand receipts," and payments transmitted by mail or express, termed "mail receipts." The payments thus made are, or are presumed to be, of fees prescribed in said section 4934, Revised Statutes, as subsequently amended by repeal of caveat fees, hereinafter set forth.

The hand receipts, after being entered on the books of the financial clerk, are sent with a slip to the mail room under charge of the chief clerk, where an independent record is kept of such receipts.

All mail is opened in the mail room of the chief clerk's office, where a record is kept of the contents of each letter and amount of money inclosed, whether transmitted by mail or express. The letters with money inclosed are turned over to the financial clerk with a written statement showing the funds under which and persons to whom the amounts inclosed are to be credited. The bookkeeper of the financial clerk enters the amounts in detail upon his books. Thus duplicate records are made of each day's financial transactions—one in the mail room, the other in the financial clerk's office. The two records are daily compared to verify their agreement.

On the morning of each business day the funds received the preceding business day, whether in currency, checks, or post-office money orders, are all deposited in the National Bank of Washington, a designated depositary, to the official credit of the financial clerk, subject to his check drawn twice a month for the sole purpose of covering the same into the Treasury, except that an amount of cash is reserved from deposit sufficient for current cash refundments or to meet outstanding refundment drafts, hereinafter explained.

Payments of fees by deposit with the Treasurer, assistant treasurers, or designated depositaries never come within the possession or control of the Commissioner of Patents or financial clerk. Certificates of deposit issue for these payments in triplicate, the original being forwarded by the depositary immediately to the Secretary of the Treasury, upon which in due course of business a warrant issues covering the same into the Treasury to the credit of the commissioner, except in isolated instances, when, upon the certificate of the Commissioner of Patents and by direction of the Secretary of the Treasury, prior to the covering in of the deposit by warrant, the Treasurer returns the amount deposited, or a part thereof, to the depositor as a refundment. The duplicate and triplicate certificates are given to the depositor.

Except as last above indicated, refundments are made by the financial clerk, whether they are due to and claimed by persons making payment at the Patent Office or to those depositing with some designated depositary.

The grounds upon which refundments are claimed and allowed are various, e. g., payment or deposit may be made by mistake, either in toto or in part; payment or deposit may be made in anticipation of contingencies which do not arise; payment or deposit may be made to cover cost of copies which can only be estimated, entitling the person paying or depositing to receive back any excess paid or deposited after work is completed, etc.

Any refundment of less than $3 is paid by the financial clerk in currency from current cash, either over the counter on the payee's receipt or transmitted by registered

mail. Any refundment of $3 or more is paid by a preaccepted draft drawn on the financial clerk to the order of the payee, good when signed and indorsed by the latter. Such draft when presented by the payee or his indorsee is paid from current cash reserved for such purpose, as hereinbefore mentioned.

Under the general direction of the Commissioner of Patents, refundments of unapplied moneys are made upon the order of the chief clerk, and of applied moneys upon the order of the chief of division in which the work is done.

The question arises whether the treatment of the moneys received and the refundments therefrom made, as above set forth, are in accordance or in conflict with the law. Sections 4935 and 4936 of the Revised Statutes are as follows:

"SEC. 4935. Patent fees may be paid to the Commissioner of Patents, or to the Treasurer or any of the assistant treasurers of the United States, or to any of the designated depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, and such officer shall give the depositor a receipt or certificate of deposit therefor. All money received at the Patent Office for any purpose or from any source whatever shall be paid into the Treasury as received, without any deduction whatever.

"SEC. 4936. The Treasurer of the United States is authorized to pay back any sum or sums of money to any person who has through mistake paid the same into the Treasury, or to any receiver or depositary, to the credit of the Treasury, as for fees accruing to the Patent Office, upon a certificate thereof being made to the Treasurer by the Commissioner of Patents."

The preceding section, 4934, prescribes the rates for patent fees. The fees for recording were slightly modified by the act of June 27, 1908 (35 Stat., 343), and the fee for caveats was stricken out by the act of June 25, 1910 (36 Stat., 843), caveats being abolished by the same act through the repeal of section 4902, Revised Statutes. Otherwise sections 4935 and 4936 appear to be the only statutes now in force relating to the receipt, disposal, and refundment of patent fees.

The provision in the last sentence of section 4935 first appeared in the proviso of section 7, act of July 20, 1868 (15 Stat., 119), and was carried into section 69, act of July 8, 1870 (16 Stat., 198, 209), entitled "An act to revise, consolidate, and amend the statutes relating to 'Patents and copyrights,'" from which sections 4935 and 496, Revised Statutes, were taken. Section 496 provides:

"All disbursements for the Patent Office shall be made by the disbursing clerk of the Interior Department."

The substance of this section first appeared in the appropriation for "Miscellaneous and contingent expenses of the Patent Office" for the fiscal year 1870, dated March 3, 1869 (15 Stat., 294). Said appropriation for each year thereafter until the fiscal year 1883 contained a specific provision for refunds, and all disbursements of said funds were required by law to be made by the disbursing clerk of the Interior Department.

The proviso of section 7, act of July 20, 1868, supra, by implication authorized the Commissioner of Patents to disburse the appropriation for miscellaneous and contingent expenses, including withdrawals and refunds for the fiscal year 1869. But since that date there appears no authority of law for the Commissioner of Patents or his financial clerk to pay refunds or make disbursements of any kind.

Since 1883 no provision for refunds has been made in the annual appropriation acts. I am therefore constrained to hold that since that time said section 4936, Revised Statutes, contains the only authority under existing law for the refundment of patent fees, whether such fees were paid at the Patent Office or by deposit directly with the Treasurer or some assistant treasurer or designated depositary.

Although neither the statutes nor the practice of making refundments at the Patent Office as hereinbefore set forth appear to have been materially changed for more than a quarter of a century, I am of the opinion that the practice is in contravention of law as expressed in the closing sentence of section 4935, Revised Statutes.

I am aware that, as held by the Supreme Court in United States *v.* Moore (95 U. S., 760, 763)—

"The construction given to a statute by those charged with the duty of executing it is always entitled to the most respectful consideration and ought not to be overruled without cogent reasons."

Nevertheless it is well established that the rule applies only in case of doubt or ambiguity in the statute itself and can only be resorted to in aid of interpretation.

In United States *v.* Graham (110 U. S., 219, 221) the Supreme Court said:

"It matters not what the practice of the department may have been or how long continued, * * *. If there were ambiguity or doubt, then such a practice, begun so early and continued so long, would be in the highest degree persuasive if not absolutely controlling in its effect. But with language clear and precise, and its meaning evident, there is no room for construction, and consequently no need to give it aid."

It would be difficult to frame a statutory provision in clearer or more emphatic terms, freer from ambiguity and doubt than the language of said closing sentence of section 4935.

Any deduction from moneys received at the Patent Office for making refundments, or for any other purpose except deposit in the Treasury, is in contravention of the plain requirements of the statute.

Settlement 5391, covering a period from April 1 to May 4, 1911, inclusive, submitted for consideration, indicates refundments from amounts received at the Patent Office aggregating $1,389.17. Nothing in the nature of vouchers for such refundments appears in the account.

So far as I am advised, there is no evidence or indication that refunds wrong in themselves have been made by the Patent Office. The wrong, so far as manifest, consists in the method of applying to refundments moneys which by law are required to be deposited in the Treasury.

I realize that the discontinuance of a practice in a bureau or office which has long obtained, and in accordance with which the books and records of the bureau or office are ordered and kept, tends to some confusion and inconvenience, and where, as in this case, the practice does not appear to involve a malum in se, reasonable time and opportunity should be allowed to effect the change. Such reasonable time in the present case appears to be the residue of the present calendar year, ending December 31, 1911. Refunds after that date from moneys received at the Patent Office for any purpose from any source will not be allowed under existing statutes in the settlement of accounts.

The questions have been mooted: First, whether it is proper under the law to deposit fees received at the Patent Office day by day to the official credit of the commissioner, or of his financial clerk, as is now done, instead of depositing the same immediately to the credit of the Treasurer, upon certificate of deposit; second, if such primary deposit to official credit be proper, whether the deposit should not be made to the official credit of the commissioner, instead of the financial clerk, as now done.

It is understood that the necessity for said primary deposit arises mainly from the fact that in large part fees are paid by checks or post-office money orders, which are not, in that form, "moneys received"; that the National Bank of Washington, a designated depositary, receives such checks and orders and places the amount thereof to the official credit of the depositor, the bank acting practically as a collecting agent for the depositor. I see no impropriety or violation of law in the employment of such agency. If all the funds received at the Patent Office are daily deposited in said bank, subject only to depositor's check for deposit of the same in the Treasury twice a month, I think such action a reasonable and substantial compliance with the requirements of law.

The function of the financial clerk is to relieve the commissioner from the details of the receipt, custody, and deposit of "patent funds." Converting the checks and

post-office money orders into current cash constitutes an important part of such details. The daily deposit of receipts and the semimonthly checking out of the same for covering into the Treasury constitute an intermediary for paying all moneys received at the Patent Office into the Treasury, as required by law. Whether the original deposit and checking out are done in the name of the commissioner or financial clerk seems immaterial so far as the security of the Government is concerned, both being bonded, and the latter in the sum of $20,000, while the former is bonded in the sum of $10,000 only, as required by law. (Sec. 479, Rev. Stat.)

I am of the opinion that sections 4935 and 4936 of the Revised Statutes should be read together as one act, and when so read I have little doubt that the latter section raises a permanent indefinite appropriation with which to effect the refunds therein provided for. The requirement in the former section for deposit in the Treasury of all money paid as fees at the Patent Office, for any purpose, without any deduction whatever, contemplates such deposits as subject to charge for excessive payments made by mistake, when the remedy intended to be effectuated by section 4936 is considered in connection with such requirement.

Under section 4936, upon proper certificate and evidence furnished by the Commissioner of Patents, the Auditor for the Interior Department is authorized to state an account in favor of a claimant for refund of patent fees paid by mistake and certify the balance due to the claimant, to be paid from the permanent indefinite appropriation for refunding patent fees, provided by said section.

Probably not more than one or two settlements a month of this class would be necessary to meet the requirements of the service, each settlement being made in favor of sundry persons as from time to time certified by the Commissioner of Patents, as is frequently done by the same auditor in the settlement of a claim or claims of a group of Indians, certified by the Commissioner of Indian Affairs.

The auditor stated the account in said settlement under two different titles of funds, to wit, "Receipts of Patent Office fees" and "Trust funds, Patent Office fees," and certified a debit balance of $315.35 under the latter title and an equal credit balance under the former title. The funds are of the same character, and no good purpose appears to be subserved by stating the account under two different titles.

Likewise no good purpose appears to be subserved by covering amounts deposited with assistant treasurers or designated depositaries into the Treasury to the credit of the Commissioner of Patents, forcing the amount of such deposits into the commissioner's accounts, instead of covering the amounts directly to the credit of the Treasurer of the United States, leaving them out of the accounts of the commissioner, who not only has no possession or control thereof, but has no knowledge of the deposit until request is made by the depositor for its application or withdrawal.

The depositaries should be instructed to furnish the depositor only one of the triplicate certificates of deposit issued, and at the same time that he transmits the original to the Secretary of the Treasury he should transmit the duplicate to the Commissioner of Patents for information, record, and file in his office and for his guidance in action on the depositor's request for withdrawal or application for the accomplishment of the purpose for which the deposit was made.

With the modification of practice above indicated, including method of refundments, the financial transactions and accounts of the Patent Office would be much simplified and inproved.

1. The Treasurer of the United States, the assistant treasurers, and designated depositaries to be instructed that after January 1, 1912, certificates of deposit will be issued in triplicate for deposit of patent fees made by persons under section 4935, Revised Statutes, the original and duplicate certificates to be forwarded by the depositary immediately to the Secretary of the Treasury and Commissioner of Patents, respectively, and the triplicate only to be given to the depositor.

2. The amount of such deposits to be covered to the credit of the Treasurer of the United States in his general account and not, as heretofore, to the credit of the Commissioner of Patents.

3. Moneys, drafts, checks, or post-office money orders received as fees at the Patent Office, or by the commissioner, chief clerk, or financial clerk of that office, may, as heretofore, be daily deposited as received, without deduction or reservation, with the designated depositary to the official credit of the commissioner or financial clerk, subject only to the check of the depositing officer for the sole purpose of covering the same into the Treasury.

4. The Commissioner of Patents shall render an account crediting the United States with all the funds so received as per the preceding paragraph, without deduction or reservation, and in the settlement of his account shall be credited upon the warrants covering the same into the Treasury.

5. Moneys deposited after January 1, 1912, with the Treasurer, assistant treasurers, or designated depositaries by persons as payment of patent fees shall not be entered in accounts of the commissioner rendered to or settled by the auditor.

6. The accounts of the Commissioner of Patents shall be settled by the auditor under one title of funds.

7. Refundments of Patent Office fees after January 1, 1912, will be made only in pursuance of settlements made by the auditor upon certificate of the Commissioner of Patents.

APPENDIX J.

BIBLIOGRAPHY OF THE UNITED STATES PATENT OFFICE, 1789 TO 1912.

BIBLIOGRAPHY OF THE UNITED STATES PATENT OFFICE, 1789 TO 1912.

The following bibliography includes all important material bearing on the origin, history, and growth of the United States Patent Office and the system which it has evolved. The references are classified as:

1. Official.
2. Unofficial.
3. Periodical.

Official references comprise reports of congressional committees, departmental officials, and commissions created to inquire into the conduct of the bureau; important legislation, proposed or enacted, and the publications of the office from 1789 to 1912.

Unofficial references include descriptive or historical works, pamphlets, and reports of private organizations interested in the patent situation.

Periodical literature for the years 1900 to 1911 has been listed and forms in the main a body of criticism upon the office, the system and law, offering in many instances constructive suggestions for improving conditions and procedure.

Within the classifications the arrangement is chronological and within a specific year material is listed alphabetically by title.

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APPENDIX K.

CLASSIFICATION OF PATENTS AND PRINTED PUBLICATIONS.

HISTORY OF CLASSIFICATION OF PATENTS.
REVISION OF PATENT OFFICE CLASSIFICATION.
THE INDEX TO CHEMICAL LITERATURE.
PROGRESS IN CLASSIFICATION, AND TIME OF COMPLETION.
CLASSIFICATION RULINGS.

HISTORY OF CLASSIFICATION OF PATENTS.

1. Classifications, 1790–1912.
2. Procedure in Settling Classification Disputes.
3. Exhibits Illustrating Prior Classifications.

HISTORY OF THE CLASSIFICATION OF PATENTS.

When the act of April 10, 1790, authorized the grant of patents upon satisfactory evidence of novelty, utility, and invention, the examination system of patent grants was independently launched into the body of existing laws. The field of search represented by patents was small. The British Crown had granted them for upward of two and a half centuries, but although available for search in England in manuscript form in the records of the court of chancery, kept in the petty bag office, they were not accessible here. No other countries had exercised any definite and continuing policy of granting patents for inventions, although France began it contemporaneously with the United States. The patent board, under the law of 1790, therefore had small need of a classification of patents. Letters of Thomas Jefferson to Oliver Evans indicate that the field of search was among the books on mechanics and the industrial arts in Jefferson's library.

When the law providing for an examination as a condition precedent to the grant of patents was repealed on February 21, 1793, the total of United States patents was 57. No printed copies were made and search had to be made in the manuscript specifications and models required to be filed therewith. A classification of 57 patents to facilitate search was unnecessary.[1]

From February 21, 1793, to July 4, 1836, the law provided for registration and issue of patents without examination. As it did not require an investigation of the question of novelty as a condition precedent to the grant, the most vital need for a classification which exists under a search system was lacking. It does not appear that any official classification had been adopted up to the 10th of Decem ber, 1830.

During the period in which the act of February 21, 1793, was in force the Department of State was charged with the duty of registering patents; the duty being within that period of a clerical nature, it devolved on a clerk specially designated to perform it, who was at first self-styled superintendent of patents, and latter was so designated in the Official Register. During the incumbency of the first superintendent, William Thornton, one clerk and one messenger were assigned to assist him. In 1830 the superintendent was assisted by three clerks, a machinist in charge of models, and a messenger.

On December 10, 1830, the Secretary of State submitted to the House of Representatives a list of United States patents classified in 16 classes. (See Exhibit A, herewith.) This was in response to a resolution of the House of Representatives, directing the Secretary of State to communicate to the House "a list of all the patents granted by the United States for the encouragement of arts and sciences, alphabetically arranged, placing in consecutive order all patents for inventions and improvements relating to the same subject, designating the names of the persons to whom granted, their places of residence, and the dates of their patents, with an alphabet-

[1] To-day many subclasses in the Patent Office classification comprise more than 1,000 patents and several more than 2,000, while some classes comprise more than 17,000 patents, and class 21 over 35,000.

ical list of the names of the patentees." Accompanying this list of United States patents classified was a statement of the then superintendent of patents, Mr. John D. Craig, from which the following is taken:

"The difficulty of classifying natural objects is well known, the gradual and imperceptible shades of difference rendering it impossible to determine exactly where one class should end and another begin. In the productions of art this difficulty is not diminished. Hence, in compiling the list of patents a doubt frequently arose concerning the class to which some of the patents did properly belong. For instance, whether the partial rotting of hemp and flax should be classed under agriculture or chemistry, dry docks under navigation or land works, etc. Besides, many of the machines patented are applicable to purposes widely different, and consequently could not be included exclusively in any one class; while the titles of others are so indefinite as to render it impossible to determine either their genera or species. In such cases, no specific disposition being practicable, when the subject or patent sought is not found where it was expected it will be discovered under some other title, to which the nature of the subject will generally refer."

This was the first official classification known to the Patent Office. Probably no other classification of any kind had previously existed excepting such assemblage of models as was desirable for purposes of exhibition. There was no necessity for any official classification of the patents themselves for search purposes because no search was made and the alphabetical index of patents published from year to year was probably adequate for the needs of the public should they desire to obtain knowledge disclosed in the specifications of patents.

This classification of December 10, 1830, included 6,170 patents, all that had been granted at that date. It was doubtless suitable for this small number of patents and to the needs of the law then in force. Few of the classes were composed of inventions having that homogeneity that would be most useful in a search for anticipation. The patents included in them were placed in some of the classes in accordance with the associations of use intended by the inventor in a certain trade, art, or profession, or in a certain group of trades, arts, or professions, rather than in accordance with the associations of their primary functions or the effects produced by the means disclosed in them. Such are the classes of agriculture, factory machinery, navigation, land works, common trades, wheel carriages, mills, arms, surgical instruments, mathematical and philosophical instruments, horology and fine arts. Other classes, such as hydraulics, and calorific and steam apparatus, depended upon the particular substances dealt with or the particular forces applied both for general or special purposes. The same is true of the class of lever and screw power, which was based not upon a particular use or effect but upon the general application of mechanical force, by means of levers or screws.

Inventions were placed in any particular class, as stated above, because of the statements of use; for instance, besides tillage and harvesting implements included in agriculture, brakes and gins and various machinery designed to operate upon agricultural products were included, and also wheelbarrows because used about a farm. Manufacture of cheese, expressing of cider, paring of apples, and harness and yokes for draft animals, etc., were also included in this class. Churns, it is noted, were put in common trades instead of in agriculture, while at a later period they were placed under the head of agriculture.

Wheel carriages included generally highway wagons, sleds, and sleighs, and accessories commonly used therewith; also meal bags. Wheelbarrows, however, as above stated, were included in agriculture.

Hydraulics appears to have contained all things which were acted upon by the force of running water or which utilized water as a means for transmitting energy, or which were used for the moving and handling of water.

Calorific and steam apparatus included all the apparatus for converting chemical energy into heat by combustion, and also apparatus generally for converting heat into motion, and for applying heat to the industrial arts, including stills, boilers, steam engines, cooking apparatus, gas making from coal, steam and other engines, salt making, brewing, and illumination.

Mills appears to have included grinding mills, power transmission generally, penstocks and flumes. Sawmills were included here instead of in common trades where woodworking was in general included.

Fine arts included musical instruments, paints, gildings, architecture, sports, printing, engraving, lithography, and the like. Varnishes, however, which might be thought to belong in the same class as paints, appear to have been classed in chemical compositions.

No further classification was attempted until after the reestablishment of the examination system by the act of July 4, 1836. In that year a classification was formed (see Exhibit B herewith), published only in the commissioner's annual report, however, increasing the number of classes from 16 to 22, and establishing one miscellaneous class, class 22. On the 4th of July, 1836, there were 9,802 patents to be classified. This classification had to provide for a search, and should, therefore, have been carefully devised in accordance with the principles governing the allowance of patents. The Patent Office had now become a bureau charged with the examination of applications for patents. The office force at that time comprised a Commissioner of Patents, a chief clerk, and two examiners.

The classification of 1836 remained substantially unchanged officially until 1868. It may be that the several examiners subdivided the material under these classes from time to time, but any such subdivision was not made official. In that period search was made from the original drawings and models. The drawings were not kept in the examining divisions but in a large hall on the second floor for that purpose and in portfolios which were opened on portfolio racks or horses for examination purposes. Both the examiners and the public made searches in this common room.

Patents began to increase rapidly and the office force was increased accordingly. In 1868, at the end of the period during which the classification of 1836 was in force, the examining force comprised, besides the commissioner, 3 examiners in chief, 20 examiners, 20 first assistant examiners, and 17 second assistant examiners. No division had more than 1 examiner and 2 assistants. A clerical force adequate to perform the clerical duties was also provided.

Up to about 1861 no specifications of United States patents were printed. In that year Congress provided for the printing of specifications. The work was begun and continued for a few months and discontinued because of the expense. It was not until 1866 that printing of specifications of patents was begun in earnest. During all this period, therefore, search had to be made in manuscript. French and English foreign patents began to be received in the years subsequent to the year 1856. Under the authority of the British patent act of 1852 British specifications and drawings were printed, and after the year 1856 English specifications in printed form were available for search in the library of the Patent Office. The field of search during all this period was thus not very large. At the end of this period (1868) there were a little over 80,000 United States patents divided into 22 classes in charge of 22 examiners, each having the help of 2 assistants. The classification of 1868 was the first attempt at subdivision of main classes. It was published in a separate pamphlet for distribution about January 1, 1868 (see Exhibit C herewith), and seems to have been a very good one for the relatively small number of patents then existing. The number of classes arose in this new classification to 36, as against 22 in the classification of 1836.

Commissioner Theaker, in referring to the classification, said: "The purpose of the change so far as it affects subjects has been to secure more homogeneity in the classes

and to allot more systematically the floating cases whose distribution has previously been rather arbitrary than consistent. Another incentive of reorganization in this particular has been the increase in the number of examiners and assistants, which is now one-fourth larger than at the date of my last annual report." The classification of 1868 does not appear, however, to have had any uniform basis, but was still divided generally according to the association of inventions with a particular industry or group of industries or the application of a particular force both to general and special uses. It seems to have been mainly a further refinement of the classification of 1836. The titles under the classes were not set forth in any particular relationship to each other, but were merely an alphabetical list of names of things included in the class, and no attempt was made to subordinate one title to another or to make the titles mutually exclusive. In fact, this classification, aside from the divisions into classes and sections, was an index of titles of inventions by classes. An alphabetical list of titles of inventions was also printed and composed the second half of the classification pamphlet published January 1, 1868. Subdivisions for purposes of more convenient examination were made by the examiners to suit their needs.

About this time an effort was made by the Commissioner of Patents to have the drawings of existing United States patents photolithographed, so that the photolithographs could be used for search purposes and the original records not be destroyed by continuous handling. A little later a large force was employed in the Patent Office for making copies of those large color drawings that were not adapted to be reduced by photolithography, and copies of the drawings of uniform size were made. The copies of the original drawings were, however, kept in the examining divisions until about 1895, but the work of printing and lithographing specifications and drawings of patents had proceeded so far that in the seventies the examiners and the public were provided with photolithographic copies of drawings from which to make searches.[1]

On March 1, 1872, a revised classification was adopted (see Exhibit D herewith). This classification comprised 145 classes and is the basis of the classification which existed when the Classification Division was created. This classification, like that of 1868, consisted only of main classes without subclasses, except that some classes of extensive development were divided into three or more classes. Cross notations were appended to some class titles and in each class were numerous common titles of things included under it, bearing no particular relation excepting an alphabetical one. The book also contained, besides this alphabetical index in each particular class, a general alphabetical index, the latter portion of the published classification book being given up to this. The title page is "Classified Index of Subjects of Invention Adopted in the United States Patent Office."

The author of this classification is said to have been Dr. Edward H. Knight, a mechanical engineer, lexicographer, and compiler of reputation at that time. He was somewhat familiar with patent law and had been employed in the offices of his brothers, who were solicitors of patents and patent lawyers. Dr. Knight was also the author of the well-known Knight's Mechanical Dictionary, a work which was, in large part, compiled by him while in the employ of the Patent Office, Commissioner Leggett having conceived that the work would be of great value to the Patent Office.

After the completion of Dr. Knight's revision, the classes were regrouped in divisions. There were at that time 22 examining divisions, each in charge of a principal examiner and most of them having two assistant examiners. An effort was made to assemble like materials in the same division. A plan of organization of the examining corps promulgated on the 22d of August, 1872, added to the organization previously existing an examiner of interferences, an examiner of trade-marks, and an

[1] This work of photolithography was completed about the year 1878. The printing of specifications is not yet completed.

examiner in charge of classifying and indexing official publications. Dr. E. H. Knight was the principal examiner of this last-mentioned division.

At the time of the publication of the classification of 1872 about 131,000 United States patents had been granted. There being in the classification of 1872, 145 classes, it will be seen that they averaged less than 1,000 patents. The Knight classification went into effect after the revision of the patent laws in 1870. At that time the office force included 1 commissioner, 1 assistant commissioner, 3 examiners in chief, 1 examiner of interferences, 1 examiner of trade-marks, 24 principal examiners, 24 first assistant examiners, 22 second assistant examiners, and 16 third assistant examiners.

The rapid increase of activity in the industrial arts caused more attention to be paid to the classification from this time on. By order of April 30, 1877, Commissioner Spear appointed a committee to give final revision to the classification and indexing of subjects of invention which was in course of publication. By order of September 19, 1877, the recommendations of this committee on classification were approved and adopted. Examiners were required to make the necessary transfers and rearrangements necessitated by the new schedules and to form their material into appropriate subclasses under the class titles. For the first time changes were forbidden except by approval of the commissioner. The classification approved September 19, 1877, was published in the Official Gazette January 1, 1878. This classification comprised 158 classes, 13 new classes being added; some were consolidated with others and some had their names changed and the character of the material contained therein modified. In the main, however, the titles were the same.

The old class of beer and wine became brewing and fermenting, for the reason, doubtless, that certain problems of brewing and fermenting did not necessarily produce beer or wine and under the old title there would have been no class properly entitled to receive such inventions.

The class of bolts, nuts, and rivets was a new one separated out from one of the metal-working groups. The title of brushes and brooms was changed to brushing and scrubbing in order to receive brushing machines as well as brushing hand tools. Caoutchouc was broadened to caoutchouc and minor plastics to provide for other plastic manufactures than those relating to india rubber.

Chemicals was broadened to beçome chemicals and medicines, many of the compositions previously included under chemicals not being chemical compositions. Clay was broadened to clay and pottery to make room for pottery ware made from other materials than clay. The class of driers and kilns was divided, driers being made a class and kilns being scattered in accordance with the material burned or treated in the kiln.

The old class of files was abolished, the patents therein going into the class of metal-working tools. Fishing was broadened into fishing and trapping. Governors was consolidated into steam engines. Gunpowder became explosives. Ice was broadened to refrigerators. Some of the metal-working classes were divided to make additional classes of metal working. The class of nails and the class of needles and pins were consolidated. Railway track and car irons was consolidated with wagon irons. metal-working tools became two classes, metal tools and implements, making, and metal-working tools.

The class of painting became painting and graining. Preserving food was broadened into the class of preserving. The class of saws was abolished and the various saws included therein were distributed into woodworking, surgery, butchery, and metal working, according to the kind of material the saw was designed to cut.

Ships were divided into two classes, ships and marine propulsion. Stables became broadened into the class of live stock. Locomotives were narrowed to steam locomotives. Steam boilers were divided into two classes, steam boilers and steam furnaces. The class of valves was broken up and a portion of it went into the broad class of water distribution and a portion became the class of steam valves, while

others of the patents were scattered in accordance with their application. The class of stone, lime, and cement made two classes, namely, stone working and artificial stone, lime, and cement. Sugar was broadened to sugar and salt, and so on.

The above is characteristic of changes that occurred from that time until the establishment of the Classification Division.

On January 6, 1880, there was published the first classification with classes and subclasses. In a few of the classes of this classification minor subclasses were indented under major ones. The division of the classes into subclasses was made by the several examiners in charge of the particular classes, and the subdivisions were in accordance with the notions of the several examiners. Sometimes the subdivisions were made on the basis of the thing treated, as in the case of class 141, washing apparatus, so that if any applications came into the office for washing which were not for washing bottles or barrels, dishes, tumblers, windows, or wool, the class of washing apparatus would not receive them. Other classes had their subclasses divided in accordance with the structure or mode of operation, as in class 83, mills, grinding mills, knife action, disk action, ball and drum, crushing rolls, etc.

Articles commonly associated in use with a particular classified subject were commonly placed with that classified subject, notwithstanding that they might be similar to things used in other connections. For example, a machine for shearing paper would be put in class 93, paper manufactures, notwithstanding the same type of machine might be used for cutting other material, and if described as for cutting leather might be placed in class 69, leather, or if used for shearing sheet metal, in class 164, punching and shearing.

There were no classes for many of the simple operations useful in different relations and with different trades. There was no place for mixing apparatus, consequently mixing apparatus was assigned in accordance with the use to which applied, if that was stated, otherwise it was forced into one class or another, according to resemblances. There was no place for separating apparatus generally. Distinctions were not made between means peculiarly adapted to produce certain complex results or manufacture certain definite articles and those not peculiarly adapted to produce those complex results or make those particular articles, but adapted to perform general operations which might, when properly directed, result in special products. Frequently the article made was placed in the same class with the process and instrument for making it.

The examiners, in fact, made the classification to suit themselves, and from year to year, as the overcrowding of one division made it desirable to equalize the work, parts of classes were lopped off and transferred to other divisions for this purpose. There were still numerous "floating cases," whose disposition had to be "rather arbitrary than consistent," and the same situation continued until the formation of the Classification Division, and still exists at the present stage of reclassification.

At the time the classification of 1880 was published there were 22 divisions in the Patent Office, that classification including 164 classes. In January, 1882, a new classification was published comprising 167 classes. There were then 25 examining divisions. In 1883 the classification included 169 classes, and the office still had 25 examining divisions. In 1885 the classification included 179 classes, most of the additional classes due to the rapid increase of invention in applications of electricity. At that time there were 28 examining divisions.

The next classification in January, 1887, included 186 classes distributed among 29 examining divisions. A classification of January, 1889, included 188 classes distributed among 30 examining divisions. In January, 1891, the number of classes had increased to 200. There were still 30 examining divisions. The next classification in 1893 included 208 classes, distributed among 32 examining divisions. In 1895 the number of classes had increased to 213 distributed among 34 examining divisions, including a trade-mark division.

On July 1, 1897, the number of classes had increased to 226, distributed among 34 examining divisions, the Division of Trade-marks having also designs and the class of optics. The next classification was published January 1, 1902, after the formation of the Classification Division and was divided into 235 classes. There were 36 examining divisions. In the next classification of January 1, 1905, there were still 235 classes; 45 of them had been revised by the Classification Division, and many of the patents formerly contained therein had been removed and consolidated with more analogous material in other classes. There were then 38 examining divisions.

On July 1, 1908, the classification contained 241 classes, the 6 additional ones having been found necessary to be established by the Classification Division to receive material gathered up in the revision occurring between 1905 and 1908. In this period 14 additional classes were revised, defined, and published. The next classification, published January 1, 1912, is that now in force. The number of classes had increased to 243 and the number of classes which had been revised, defined, and published to 107. On July 1, 1908, the classes were divided among 41 divisions and on January 1, 1912, among 43 divisions, exclusive of trade-marks and designs.

Through the period from 1878 to the formation of the Classification Division in 1898 the growth of the classification was by the methods indicated heretofore.

STATEMENT AS TO PROCEDURE IN SETTLING CLASSIFICATION DISPUTES.

In the earliest times examiners sought to settle among themselves their disputes as to the classification of applications. If they could not agree, they referred the matter informally to the commissioner who designated the particular examiner whom he wished to examine the application. In 1868 efforts began to be made to establish some rules for the assignment of pending applications. The official draftsman appears to have been designated at that time to keep the classification records straight. Examiners were sometimes guilty of scratching out the classification mark upon the drawing and placing another thereon. This practice was forbidden. An order of Commissioner Fisher of July 2, 1870, required that in all cases in which the classification of the drawings required changing the same should be done in the Draftsman's Division.

An order of Commissioner Spear, dated February 4, 1878, is an example of the ruling of the commissioner in a disputed classification case. This reads as follows:

Special order No. 7.

The application of William H. Jay for "process for grinding cork" is assigned to Examiner Bartlett. It is more nearly allied to machines for reducing wood to fibrous or elastic mass than to any other machines or process in the office.

The only safe rule to follow in a doubtful case like this is to assign the application to the class most nearly analogous to it and not to the examiner most willing to take it.

This application appears to have been passed from one examiner to another and thereby delayed. Hereafter Col. Moore will refer cases of doubtful classification at once to the commissioner or assistant commissioner for decision in accordance with a previous order.

ELLIS SPEAR, *Commissioner of Patents.*

At one time the chief of the Application Division was required to submit to the commissioner or assistant commissioner doubtful cases which had been refused by examiners to whom they had been assigned. Under this practice, if the examiner thought that the application did not belong to him, he declined to receive it and suggested another examiner. The Application Division then sent the case to this other examiner, and if he refused it, the chief of the Application Division then submitted the matter to the commissioner. This is the procedure referrred to in the order of Commissioner Spear just quoted. When a new classification book was to be

published, examiners were directed to prepare and submit the changes in classes and subclasses which they desired to make; thus an order issued by the chief clerk, under authority of the Acting Commissioner of Patents, December 15, 1881, states: "Examiners are requested to prepare and submit, without delay, any changes or proposed changes in the classes or subclasses of inventions in their respective divisions for publication in the revised classification of the subjects of invention for the year 1882."

The trouble caused by missing interferences, and by the issue of patents in one division for inventions similar to those issued in another, caused the commissioner to issue an order, dated August 29, 1885, directing certain procedure designed to avoid these errors of classification and oversights of examination. This order required:

"First. In cases where an examiner, upon receipt of an application, decided that such application had not been correctly assigned to his division, he should immediately return it to the Application Division with the statement, in writing, indicating the class or division to which, in his opinion, it properly belonged; in doubtful cases the examiner should state the facts upon which his opinion was based.

"Second. Upon the reception and retention by an examiner of any application, and in applications then pending which would be likely to interfere with any pending application in another division, he should at once confer with the examiner in charge of such other division in regard thereto.

"Third. Examiners in charge of classes or subclasses which were closely analogous to classes or subclasses in charge of other examiners should be careful and should take particular pains to see that all investigations and comparisons were made at once, to prevent missing interferences and the issuance of patents in that division for inventions similar to those issued in others.

"Fourth. Examiners in charge of classes or subclasses which were closely analogous or in danger of conflicting were directed to confer together and establish lines of classification as clearly defined as might be, and report the same to the assistant commissioner. In cases of disagreement in relation thereto, the same should be submitted, in writing, to the assistant commissioner."

On May 28, 1886, the commissioner, doubtless finding himself overloaded with work, appointed a committee of examiners, whose duty it was to settle disputes among examiners regarding proper classification of pending applications. In the following year the committee of 1886, composed of three examiners, was superseded by a committee of examiners composed of five members, whose duties were set forth in the order of February 3, 1887. This order required:

"First. All recommendations and requests for the creation, abolition, change, or transfer of any class or subclass should be, by the officer proposing the same, sent to this committee. Said committee should consider all such questions and report to the commissioner their recommendations in relation thereto.

"Second. Whenever a question should arise as to the proper division where any particular application belonged, such application should be referred to this committee, which should direct in relation thereto.

"Third. Said committee should consider and advise the application clerk as to all questions pending affecting the proper assignment of applications forwarded by him.

"Fourth. All communications addressed to the commissioner respecting any change in the force employed or to be employed in any of the examining divisions should be referred to this committee, which should, from time to time, whenever in its judgment a necessity therefor existed, report to the commissioner any changes which should be made in such force.

"Fifth. Said committee should meet regularly once in each week for the consideration of all questions and matters which should be referred to them."

This committee established a certain practice (put in effect by order of Feb. 24, 1887) in accordance with which hearings on disputed classifications should be had.

In 1889 the classification committee was abolished, and classification hearings were again directed to be heard by the assistant commissioner. Apparently the assistant commissioner found the duties a little onerous, and it was necessary for the commissioner to direct examiners to use their best efforts to effect a proper assignment before submitting a case to the assistant commissioner.

In 1894 classification disputes were still heard and settled by the commissioner or the assistant commissioner, but by order of February 15, 1894, the commissioner declared that no written statements would be received, but that the questions should be heard orally and disposed of summarily.

In 1898 a new classification committee was created to determine the questions of classification, and by order of January 18, 1898, the procedure in regard to disputed classification was set forth.

The Classification Division was formed by order No. 1250, of November 17, 1898, and Principal Examiner F. C. Skinner, at that time in charge of division 7, was assigned to be the chief thereof.

By order of March 8, 1899, all requests for the transfer of patents were required to be submitted to the Chief of the Classification Division.

By order No. 1286, of June 7, 1899, the procedure was outlined in submitting for a classification applications about which there was dispute. This order is still in force. It reads as follows:

"Upon receiving an application from the application clerk, and before entering upon the register, each examiner will forthwith decide whether it has been properly assigned to his division. If the case does not belong to his division, he will forward it, together with the showing upon which he relies, to the examiner who, in his opinion, should have the case. If there be more than one division involved, each examiner will in turn make a prompt report upon the case, with the necessary showing, and the last examiner to receive it will send all the papers to the Classification Division, where the case will be docketed for an early hearing.

"Examiners will be held responsible for delays in the carrying out of the requirements of this order.

"C. H. DUELL, *Commissioner*."

By order of October 7, 1899, the stamps for stamping titles of the class and subclass were required to be delivered to the Classification Division by the examining division when any particular class had been revised by the Classification Division. The mode of indicating the classification upon an application when passed to issue was also directed in this order.

EXHIBIT A TO APPENDIX K.

Classification of United States patents, December 10, 1830.

Agriculture: Plows, harrows, cultivators; planting, seeding, mowing, and thrashing machines; rakes, wheat fans, clover seed and rice cleaners, straw cutters, etc.

Factory machinery: For cotton, wool, flax, hemp, paper, rolling, and slitting mills, nail cutters, etc.

Navigation: Ships, boats, marine railways, canal locks, mud machines, dry docks, etc

Land works: Railways, roads, bridges, excavating and boring machines, pile engines, etc.

Common trades: Brickmaking and planing machines, trip hammers and bellows, turning lathes, churns, washing machines, household furniture and utensils; also shoes, boots, saddles, harness, etc.

Wheel carriages: Coaches, chairs, wagons, carts, waywisers, mail bags and boots, hub boxes, and locomotive engines, etc.

Hydraulics: Pumps, fire engines, hose, valves, etc.

Calorific and steam apparatus: Furnaces, fireplaces, stoves, boilers, stills, steam engines, kilns, etc.
Mills: Water and other wheels; grist, saw, coffee, etc., mills, and the various parts of their machinery.
Lever and screw power: Applied to printing, coining, apple, and other presses.
Arms: Cannons, mortars, muskets, rifles, pistols, percussion and other locks, swords, etc.
Surgical instruments.
Mathematical and philosophical instruments: For surveying, engineering, mining, nautical, and philosophical purposes.
Horology: Clocks, timekeepers, chronometers, etc.
Chemical compositions: Tanning, patent medicines, cements, dyes, etc.
Fine arts: Musical instruments, paints, varnishes, gildings, sculpture, architecture, and gardening.

EXHIBIT B TO APPENDIX K.

Classification of United States patents, 1836 to 1868.

Class 1. Agriculture, including instruments and operations.
Class 2. Metallurgy, and manufacture of metals and instruments therefor.
Class 3. Manufactures of fibrous and textile substances, including machines for preparing fibers of wool, cotton, silk, fur, paper, etc.
Class 4. Chemical processes, manufactures, and compounds, including medicine, dyeing, color making, distilling, soap and candle making, mortars, cements, etc.
Class 5. Calorific, comprising lamps, fireplaces, stoves, grates, furnaces for heating buildings, cooking apparatus, preparation of fuel, etc.
Class 6. Steam and gas engines, including boilers and furnaces therefor, and parts thereof.
Class 7. Navigation and marine implements, comprising all vessels for conveyance on water, their construction, rigging, and propulsion; diving dresses, life preservers, etc.
Class 8. Mathematical, philosophical, and optical instruments, including clocks, chronometers, etc.
Class 9. Civil engineering and architecture, comprising works on rail and common roads, bridges, canals, wharves, docks, rivers, dams, and other internal improvements, buildings, roofs, etc.
Class 10. Land conveyance, comprising carriages, cars, and other vehicles used on roads, and parts thereof.
Class 11. Hydraulics and pneumatics, including water wheels, windmills, and other implements operated on by air or water, or employed in raising and delivering of fluids.
Class 12. Lever, screw, and other mechanical power, as applied to pressing, weighing, raising, and moving weights.
Class 13. Grinding mills and mill gearing, containing grain mills, mechanical movements, horsepowers, etc.
Class 14. Lumber, including machines and tools for preparing and manufacturing, such as sawing, planing, mortising; shingle and stave, carpenters', and coopers' implements.
Class 15. Stone and clay manufactures, including machines for pottery, glass making, brickmaking, dressing and preparing stone, cements, and other building material.
Class 16. Leather, including tanning and dressing, manufacture of boots, shoes, saddlery, harness, etc.
Class 17. Household furniture, machines and implements for domestic purposes, including washing machines, bread and cracker machines, feather dressing, etc.

Class 18. Arts, polite, fine, and ornamental, including music, painting, sculpture, engraving, books. paper, printing, binding, jewelry, etc.
Class 19. Firearms and implements of war, and parts thereof, including the manufacture of shot and gunpowder.
Class 20. Surgical and medical instruments, including trusses, dental instruments, bathing apparatus, etc.
Class 21. Wearing apparel, articles for the toilet, etc., including instruments for manufacturing.
Class 22. Miscellaneous.

EXHIBIT C TO APPENDIX K.

Classification of United States patents, 1868.

Class 1. Agriculture: Implements and machines for working the soil, including sowing, planting, fertilizing, digging and gathering roots, etc., grafting and pruning. (For Harvesting, see class 15.)
Class 2. Agricultural products, preparation of: Implements and machines for preparing produce for market, including threshing, winnowing, protecting and preserving crops and produce; fences and gates, cribs, granaries, stack covers, and barns; incubation, culture of bees, care of domestic animals, and dairy implements.
  Section 1: Threshing, etc.
  Section 2: Miscellaneous.
Class 3. Builders' hardware: Door locks and fastenings, hinges, bellhanging, and the metallic trimmings of houses, etc.
Class 4. Calorifics: Apparatus for heating, ventilating, and cooking. (For Blast and ventilating fans, bellows, etc., see class 17.)
  Section 1: Heating.
  Section 2: Ventilating.
  Section 3: Cooking.
Class 5. Carriages: The construction of wheeled vehicles, including trucks, sleighs, etc. (For Railroad cars, see class 28.)
Class 6. Chemical processes: Instruments and methods of evaporation, distillation, dyeing, tanning, waterproofing, vulcanizing india rubber, etc., and the manufacture of acids, salts, starch, sugar, alcohol, vinegar, dyes, paints, gas, glue, fats and oils, soaps, manures, etc.
Class 7. Civil engineering: The construction of canals, roads, bridges, wharves, docks, sewers, weirs, dams, etc., and including military engineering, mining, architecture, masonry. (For Blasting, etc., see class 12.)
  Section 1: Engineering.
  Section 2.: Architecture.
Class 8. Clay manufactures: The making of bricks, tiles, pottery, porcelain, and machines, tools, and kilns for manufacturing and enameling the same, including lime and cement kilns and peat machines.
Class 9. Compositions: Artificial substances formed by the mechanical or chemical combination of different ingredients.
Class 10. Felting and hat making: Methods and apparatus for felting wool, etc., and the making and finishing of hats, etc., including implements and machines for the same.
  Section 1: Methods and machines.
  Section 2: Articles.
Class 11. Fine arts: Methods and applications of music, carving, sculpture, painting, graining, engraving, lithography, wood cutting, etc.; photography, bank notes, etc.; jewelry, including instruments and materials for the same; designs.
  Section 1: Arts.
  Section 2: Designs.

Class 12. Firearms: Implements of war, offensive and defensive, including ammunition and its incidents, and blasting.
Section 1: Arms.
Section 2: Projectiles, etc.
Section 3: Blasting, etc.
Class 13. Glass manufacture: Glass furnaces; molding, blowing, cutting, grinding, and polishing glass, and implements and machines for the same.
Class 14. Grinding mills: Machines for breaking, crushing, and grinding materials, including grain cleaning, flour bolting, etc. (For Mill gearing, see class 20.)
Class 15. Harvesters: Implements and machines for harvesting and securing crops, etc. (For Hand hay rakes and pitchforks, see class 2.)
Class 16. Household furniture: Articles, implements, and machines for domestic purposes. (For Culinary utensils, see class 4.)
Section 1: Food utensils.
Section 2: Furniture, etc.
Section 3: Miscellaneous.
Class 17. Hydraulics and pneumatics: Machines and apparatus for raising, conveying, and directing water and other fluids, including bottling and apparatus for controlling and operating air, etc.
Class 18. Illumination: Implements and devices for obtaining, preserving, and regulating artificial illumination.
Class 19. Leather manufactures: Machines and tools for working in leather, and the manufacture of boots and shoes, harness, trunks, belting, etc., including preparatory processes, cutting, splitting, etc.
Section 1: Machines.
Section 2: Boots and shoes.
Section 3: Harness.
Section 4: Miscellaneous.
Class 20. Mechanical engineering: General mechanical movements, horsepowers, lifting jacks, hoisting apparatus, mill gearing, etc. (For Presses, see class 26.)
Class 21. Metallurgy: The preparation and treatment of ores, reduction and purification of metals, and processes for amalgamating, electroplating, and metallic coating.
Class 22. Metal working: Methods, machines, and tools for shaping metals; construction of machines and articles of metal; manufactured articles of metal.
Section 1: Machines and methods of primary application.
Subsection A.
Subsection B.
Section 2: Machines, apparatus, and tools for particular uses.
Subsection A.
Subsection B.
Section 3: Methods and machines for the manufacture of special articles, and manufactured articles.
Subsection A.
Subsection B.
Class 23. Navigation: The construction of vessels, sails, rigging, propelling and steering apparatus, lifeboats, preservers, rafts, etc.
Class 24. Paper making: The preparation of vegetable pulp, and the manufacture of paper; papier-mâché, pasteboard, etc.
Class 25. Philosophical instruments: Including mathematical, optical, surveying, and nautical instruments; philosophical apparatus, scales, measures, and instruments of precision generally; registering, computing, signalling, telegraphing, and the applications of electricity and magnetism.
Section 1: Mathematical, etc.
Section 2: Mensuration.
Section 3: Electricity.

Class 26. Presses: Machines for compressing articles and materials. (For Printing presses, see class 27.)

Class 27. Printing and stationery: Implements and machines for printing, type-setting, and distributing; type founding and stereotyping, stamping, etc.; machines and tools, and ruling, folding, and cutting paper, and for bookbinding; labels, advertising cards, writing materials, etc.

Section 1: Printing.

Section 2: Bookbinding, stationery, etc.

Class 28. Railroads and railroad cars: The construction of rails, chairs, switches, etc., and the rolling stock of railroads. (For Engines or locomotives, see class 31.

Section 1: Railroads.

Section 2: Cars, etc.

Class 29. Sewing machines: Machines for sewing, stitching, embroidering, etc., and the incidents of such machines.

Class 30. Sports, games, and toys: Gymnastic apparatus, appliances for archery, fishing, skating, etc.; plays, games, diversions, and implements and devices for amusement.

Class 31. Steam and air engines: Machines for the application of vapor or gas as a motor; boiler and other apparatus for generating the same; governors, steam pumps, and feed apparatus, condensers, etc.

Class 32. Stone working: Machines and tools for hewing, cutting, and dressing stone, marble, granite, slate, etc.

Class 33. Surgical apparatus: Instruments and apparatus for the mechanical treatment of bodily infirmities, injuries, and diseases, and for assisting natural functions, including artificial limbs, etc. (For cutting instruments of surgery, see class 22.)

Class 34. Textile manufactures: The treatment of cotton, flax, hemp, etc.; wool, hair, silk, etc.; and machinery for carding, spinning, cord and rope making, weaving, knitting, lace making, and braiding.

Section 1: Carding, etc.

Section 2: Spinning, twisting, and braiding.

Section 3: Weaving, etc.

Section 4: Knitting, etc.

Class 35. Wearing apparel: Articles of clothing, and methods and machines for making the same, including articles for the toilet, etc. (For Hats, see class 10; boots and shoes, see class 19; sewing machines, see class 29.)

Section 1: Garments, fastenings, etc.

Section 2: Toilet and work stand.

Section 3: Machines, etc.

Section 4: Miscellaneous.

Class 36. Woodworking: Machines and tools for felling trees; hewing, sawing, planing, bending, turning, mortising, dovetailing, and splitting wood; shingle and stave cutting, comb sawing, and the making of blinds, broom handles, treenails, pegs, match splints, etc.

Section 1: Machines.

Section 2: Tools, etc.

EXHIBIT D TO APPENDIX K.

Classification of subjects of invention, United States Patent Office, March 1, 1872.

Class 1. Aeration and bottling: Aerated liquor apparatus and processes, soda fountains and fire annihilators, barrel filling and bungs, bottling and bottle stoppers.

Class 2. Apparel: Clothing and clothes making, worktable appliances, patterns for garments.

Class 3. Artificial limbs: Including all prosthetic parts, splints, fracture, and orthopedic appliances.
Class 4. Baths and closets: Baths, water and earth closets, urinals, washstands and basins, sinks, and stench traps.
Class 5. Beds: Bedsteads, bedding, and bed furniture.
Class 6. Beehives: Apiaries and bee culture.
Class 7. Beer and wine: Beer, wine, cider, and vinegar.
Class 8. Bleaching, dyeing, etc.: Bleaching, dyeing, sizing, and printing fabrics; starch.
Class 9. Boats: Boats, rafts, and life preservers.
Class 10. Bolts, nuts, and rivets: Articles, varieties, and machines for making. Taps, screw dies, and lock nuts.
Class 11. Bookbinding: Binding books and ruling paper.
Class 12. Boots and shoes: Boots, shoes, their parts, varieties, and materials, tools and machines for making.
Class 13. Brakes and gins: Treatment of raw flax, hemp, and cotton, hair and oakum pickers, and husk splitters.
Class 14. Bridges: Bridges and arches, their piers and abutments, trusses and girders for bridges, floors, and roofs, iron trusses, piers, and columns.
Class 15. Brushes and brooms: Brooms, brushes, mats, mops, and machines for making.
Class 16. Builders' hardware: Metallic trimmings of houses and furniture.
Class 17. Butchering: Catching, slaughtering, and skinning animals, dressing carcasses, cutting meat, sausage making.
Class 18. Caoutchouc: Preparation and manufacture of caoutchouc, gutta-percha, and vulcanite.
Class 19. Carding: Preparation of cotton and wool for spinning.
Class 20. Carpentry: Woodwork of houses.
Class 21. Carriages and wagons: Construction of wheeled vehicles, including sleighs, trucks, barrows, litters, and yokes.
Class 22. Casting: Appliances, machines, modes, and tools of the foundry.
Class 23. Chemical, miscellaneous: Chemical apparatus, processes, and compositions, not otherwise specifically assigned, as noted below.
Class 24. Clasps and buckles: Small metallic attachments; buckles, buttons, clasps, eyelets, hooks, links, rings, studs, etc., and implements and machines for attaching and closing.
Class 25. Clay: Bricks, clay mills, brick and tile machines and presses, ceramic manufactures, earthenware, pottery, crucibles, glazes, kilns.
Class 26. Cloth: Dressing and finishing of woven fabrics.
Class 27. Coffins.
Class 28. Cordage: Braid, cord, rope, thread, twine, and yarn.
Class 29. Crinoline and corsets: Hoop skirts, corsets.
Class 30. Cutlery: Knives, scissors, and shears.
Class 31. Dairy: Machines and appliances for milking; butter and cheese making.
Class 32. Dental: Dental instruments, supplies, and processes.
Class 33. Drafting: Drafting, plotting, and mathematical instruments.
Class 34. Dryers and kilns: Apparatus and machines for drying.
Class 35. Educational: Devices for teaching reading, writing, arithmetic, astronomy, geography, penmanship, etc.
Class 36. Electricity: Batteries, instruments; applications of electricity, galvanism, and magnetism; electric telegraphs.
Class 37. Excavating: Earth excavating, grading, and boring.
Class 38. Felting and hats: Materials, apparatus, machines, and processes for felting wool and hair, including the manufacture of hats, caps, and other head coverings.
Class 39. Fences: Fences, gates, posts, post-hole diggers.
Class 40. Files: Files, rasps, and machines for making.

Class 41. Fine arts: Sculpture, carving, painting, engraving, lithography, and allied arts; stenciling, ornamentation, decoration, diesinking, artists' appliances.

Class 42. Firearms (excepting ordnance and projectiles of all kinds).

Class 43. Fishing.

Class 44. Fuel: Artificial fuel; treatment of peat and coal; kindling composts.

Class 45. Furniture: Household furniture, upholstery, window shades, mirrors (except beds and bedding, class 5; kitchen utensils, class 65; stoves and stove fittings, class 126). (For machines and tools for making furniture, see Woodworking, classes 142–145; for manufacture of furniture hardware, see class 53, sec. D.)

Class 46. Games and toys: Games, gymnastic and exercising apparatus, traps, and nets.

Class 47. Garden and orchard: Tools (not machines) for digging, cultivating, and preparing the soil, planting, transplanting, weeding, protecting, plotting, and forcing plants; orchard culture, destroying insects, gathering fruit, sorghum strippers, and maple-sap gathering. (Except pruning knives, shears, etc.; see Cutlery, class 30. For manufacture of husbandry tools, see class 81, sec. B.)

Class 48. Gas: Manufacture of gas, carbureters.

Class 49. Glass: Compositions, tools, and appliances for glass manufacture, modes of manufacturing articles of glass. (For manufacture of glassmakers' tools, see class 81, sec. B; excepting glass cutting, grinding, and polishing, class 51.)

Class 50. Governors: Governors for steam engine and other machinery (excepting brakes for machinery, class 74).

Class 51. Grinding and polishing: Modes, apparatus, tools, processes, and appliances for glass, metal, stone, and wood (excepting clay and mortar machines, class 25; fruit grinding, class 100; grinding mills, class 83; ore and stone mills, class 90).

Class 52. Gunpowder: Explosive compounds, compositions, and manufactures, pyrotechnics, compositions for matches.

Class 53. Hardware manufacture: Manufacture of hardware fittings and trimmings, arms, cutlery, and jewelry. (Under the following heads: A, arms and cutlery; B, builders' hardware; C, carriage hardware; D, furniture hardware; E, personal wear; F, saddle and harness hardware; G, shoemakers' hardware; H, spinning and weaving hardware; I, stationary and miscellaneous hardware; J, trunk and carpet-bag hardware; K, water and gas fittings.)

(For manufacture of railway track and car irons and fittings, see railways 4, class 107; see also metal working, p. 106.)

Class 54. Harness: Tools, machines, and special hardware, saddles, harness, muzzles, pokes, gags, and whips (except hooks, snap hooks, and rings, class 24). (For manufacture of saddlery and harness hardware, see class 53, sec. F; manufacture of leather-working tools, see class 81, sec. B.)

Class 55. Harrows: Machines for rolling and pulverizing the soil and preparing the surface. (For manufacture of husbandry hardware, see class 81, sec. B.)

Class 56. Harvesters: Machines and implements (except hand hay rakes and forks) for gathering and securing crops. (For the manufacture of iron parts of harvesters, see class 81, sec. B.)

Class 57. Hoisting.

Class 58. Horology: Clocks, watches, timekeepers, and registers, and cases for the same. (For watchmakers' tools, see class 81, sec. A.)

Class 59. Horseshoes: Shoes and machines for making. (For blacksmiths' forges and machines see metal working 3, class 78; for blacksmiths' tools, see class 81, sec. A.)

Class 60. Hose and belting: Hose and belting, compositions and machinery for making, couplings, and fasteners. (For manufacture of leather-working tools, see class 81, sec. B.)

Class 61. Hydraulic engineering: Aqueducts, canals, dikes, harbors, breakwaters, docks, quays, subaqueous explorations and works, piles, improvement of rivers.

Class 62. Ice: Refrigerative processes and machinery, gathering, manufacturing, storing, and applications of ice.

Class 63. Jewelry: Bracelets, brooches, dress pins, rings, and ornaments. (For manufacture of jewelry, see class 53, sec. E.)

Class 64. Journals and bearings: Journals, bearings, shafting, couplings, and lubricators.

Class 65. Kitchen utensils: Machines and appliances for preparing bread, meat, fruit, and vegetables for cooking or for the table; tableware (except cutlery), baskets, boxes, and crates for packing and transporting provisions (not including stoves and their appliances, class 126).

Class 66. Knitting and netting: Knitting, netting, lace, and hosiery. (For manufacture of parts of knitting machines, see class 53, sec. H.)

Class 67. Lamps and gas fittings: Lamps, lanterns, lights, gas fittings, and lighting devices.

Class 68. Laundry: Washing, wringing, and drying machines and the appliances of the laundry.

Class 69. Leather: Machines for operating upon leather irrespective of its specific application or use.

Class 70. Locks and latches: Locks, latches, their trimmings and accessories. (For manufacture of locks, see class 53, sec. B.)

Class 71. Manures: Composition and preparation of fertilizers. Treatment of guano, sewage, offal, poudrette, marl, composts, etc.

Class 72. Masonry: Masonry, brickwork, structures of concrete, plastering, iron houses.

Class 73. Measuring instruments: Instruments of precision, including counting machines and registers, meteorological instruments, measures and measurers of number, distance, weight, capacity, speed, temperature, moisture, etc. (excepting drafting and mathematical, class 33; electrical, class 36; horological, class 58; optical and surveying, class 88).

Class 74. Mechanical powers: Horsepowers, arrangements of gearing, brakes for machinery, cranks, pitmans, treadles; modes of converting, multiplying, and transmitting motion. (For excavating, see class 37; hoisting, see class 57; journals and shafting, see class 64; mills, see class 83; presses, see class 100.)

Class 75. Metallurgy: Furnaces, operations, processes, and machinery for the reduction and manufacture of metals.

Class 76. Metal working, 1: Bending and straightening, modes, apparatus, machines, tools, and appliances (except as otherwise specifically classified).

Class 77. Metal working, 2: Boring and drilling, modes, apparatus, machines, tools, and appliances (excepting those otherwise specifically classified).

Class 78. Metal working, 3: Forging, swaging, and riveting, modes, apparatus, machines, tools, and appliances (except as otherwise specifically classified).

Class 79. Metal working, 4: Punching, cutting and shearing, modes, apparatus, machines, tools, and appliances (except as otherwise specifically classified).

Class 80. Metal working, 5: Rolling, machines, modes, tools, apparatus, and appliances (except as otherwise specifically classified).

Class 81. Metal working, 6: Tools, under the following heads: A, metal-working tools; B, manufacture of metallic tools for purposes other than metal working.

Class 82. Metal working, 7: Turning, planing, slotting, and milling (except as otherwise specifically stated).

Class 83. Mills: Grinding mills for bark, cane, grain, paint, sugar, flour bolts, smut and hulling mills (excepting clay and mortar mills, class 25; fruit mills and presses, class 100; ore mills and stone crushers, class 90).

Class 84. Music: Instruments, attachments, and accessories.

Class 85. Nails: Nails, spikes, tacks, and staples, and machines for making.

Class 86. Needles and pins: The manufacture and preparation for market.
Class 87. Oil, fat, and glue: Including glycerin, paraffin, soap, wax, and candles.
Class 88. Optics: Astronomical, optical, and surveying instruments.
Class 89. Ordnance (except projectiles, class 102).
Class 90. Ore: Apparatus, machines, and processes for crushing and grinding ore, stone, coal, or bone; for separating ores of precious metals, mechanically or by amalgamation.
Class 91. Paint: Paints, pigments, varnishes, lacquers, and staining compositions, and their manufacture; painted and enameled fabrics; lining barrels; leaf gilding; air, fire, and waterproofing fabrics and processes.
Class 92. Paper making: Manufacture of paper, cardboard, etc., and of articles direct from the pulp.
Class 93. Paper manufactures: Articles of paper, appliances, machines, processes, and tools for manufacturing articles of paper.
Class 94. Paving: Materials, compositions and varieties, streets and sidewalks, making, repairing, and sweeping.
Class 95. Photography: Instruments and processes.
Class 96. Plating: Metals on metals.
Class 97. Plows: Machines for breaking, digging, trenching, and paring the soil, cultivating crops, and digging roots. (Manufacture of agricultural tools, etc., of metal, see class 81, sec. B.)
Class 98. Pneumatics: Mechanical applications of air and other elastic fluids; ventilation (except valves, class 136). (For manufacture of pipe and gas fittings, see class 53, sec. K.)
Class 99. Preserving food: Preservative processes and hermetical packages (excepting bottling, class 1; drying and smoking, class 34; refrigerating, class 62).
Class 100. Presses: Except printing and hydraulic presses.
Class 101. Printing: Appliances and supplies of the printing office, type, stereotype, and electrotype.
Class 102. Projectiles: Balls, bombs, bullets, cartridges, fuses, rockets, shell, shot, and torpedoes; blasting.
Class 103. Pumps: Water elevators, hydraulic engines, jacks, meters, presses, and rams; water and spirit meters, injectors, and ejectors.
Class 104. Railways, 1. The "way": Elevated, pneumatic, portable, and street railways; crossings, frogs, gates, guards, joints, rails, splices, switches, etc. (For manufacture of railway tracks, irons, etc., see class 107; rolling railway rails, see class 80.)
Class 105. Railways, 2. Cars: Their varieties and interior fittings. (Manufacture of railway car irons, see class 107.)
Class 106. Railways, 3. Car mountings and exterior fittings. (Manufacture of railway car irons, see class 107.)
Class 107. Railway irons: Manufacture of railway track and car irons, tires, wheels, and iron fittings.
Class 108. Roofing: Materials, compositions, and varieties (except girders and trusses, class 14).
Class 109. Safes: Burglar, fire and water proof safes and vaults.
Class 110. Saws: Saws, sawmills, sawing machines. (For saw filing and grinding, see class 51; saw gummers, sets, and swages, see class 79; saw making, see class 79.)
Class 111. Seeders and planters: Machines for sowing and planting seed and distributing fertilizers. (For manufacture of agricultural tools of metal, see class 81, sec. B.)
Class 112. Sewing machines: Machines for sewing, stitching, embroidery, buttonholing; attachments and appurtenances of sewing machines.

Class 113. Sheet metal: Modes, machines, and tools for the manufacture of sheet-metal ware and other articles of sheet metal.
Class 114. Ships, 1: Construction, masting, rigging, fittings.
Class 115. Ships, 2: Propulsion of vessels.
Class 116. Signals: Audible and visual signals and alarms, except electrical. Bell-hanging and telegraphs other than electrical.
Class 117. Silk: Special appliances of silk filature and working.
Class 118. Spinning. (For manufacture of spinning hardware, see class 53, sec. H.)
Class 119. Stabling: Care of domestic animals; shelters, stalls, preparation of food, feeding, currying.
Class 120. Stationery: Writing materials and appliances; desk and office supplies; address, canceling, numbering, and seal stamps; cards, checks, labels, seals tickets, advertising appliances and signs; mechanical momoranda and nonautomatic indicators. (For the manufacture of metallic articles of stationery, see class 53, Sec. I.)
Class 121. Steam, 1: Engines, their parts and applications (except valves, class 136).
Class 122. Steam, 2: Steam boilers, superheaters, boiler-setting, and furnaces (except registering devices of water, vacuum and steam pressure gauges).
Class 123. Steam, 3: Locomotives, traction engines, portable engines, and their special parts.
Class 124. Stills: Distillation and refining of spirits; oils and acids; burning fluids.
Class 125. Stone, lime, and cement: Mining, quarrying; boring rock; stone, marble, and slate working; lime, mortar, concrete, and cement (excepting mortar and concrete mills and mixers, see class 25; marble, slate, and stone polishing, see class 51; kilns, see class 34).
Class 126. Stoves and furnaces: Cooking and heating stoves, furnaces and ranges, cooking utensils, and stove appliances.
Class 127. Sugar: Evaporation, refining, and chemical processes; salt furnaces and pans; boneblack; candy.
Class 128. Surgery: Including pharmaceutical apparatus, appliances for the compounding and administration of medicine (except artificial limbs and other prosthetic parts, class 3; dental appliances, class 32; surgical cutlery, class 30).
Class 129. Tanning: Treatment of hides and manufacture of leather. (For enameling and japanning of leather, see class 91.)
Class 130. Thrashing: Machines for husking, thrashing, shelling, winnowing, and stacking.
Class 131. Tobacco: Processes, machinery, and appliances for the manufacture and use.
Class 132. Toilet: Articles and appliances for the toilet and hair working.
Class 133. Trunks: Traveling and military accouterments, except mess kits. (For manufacture of metallic portions of trunks, see class 53, sec. J.)
Class 134. Tubing and wire: Manufacture of wrought-metal and drawn-metal tubing and wire.
Class 135. Umbrellas and fans: Canes, fans, parasols, and umbrellas. (For manufacture of the metallic parts of the above, see class 53, sec. I.)
Class 136. Valves: Cocks, faucets, taps, valves for all fluids. (For the manufacture of water and gas fittings, see class 53, sec. K.)
Class 137. Water distribution: Including well tubing, filters, pipes, and coupling. (For the manufacture of water and gas fittings, see class 53, sec. K.)
Class 138. Water wheels.
Class 139. Weaving: Looms, their mechanisms, parts, and products. (For manufacture of weaving hardware, see class 53, sec. H.)
Class 140. Wireworking: Cables, fences, screens, and sieves of wire.
Class 141. Wood screws: The article and its manufacture.

Class 142. Woodworking, 1: Lathes and wood turning.
Class 143. Woodworking, 2: Machines for general work (except sawing machines, class 110).
Class 144. Woodworking, 3: Machines for special work.
Class 145. Woodworking, 4: Tools. (For manufacture of woodworking metallic tools, see class 81, sec. B.)

REVISION OF PATENT OFFICE CLASSIFICATION.

[A statement prepared by the Patent Office.]

In pursuance of an act of Congress approved June 28, 1898,[1] Commissioner of Patents Duell, by order No. 1250, dated November 28, 1898, created the Classification Division and assigned Examiner F. C. Skinner to be the chief thereof, with the duty of making a thorough revision of the Patent Office classification of subjects of invention. The assignment was made without prior notice. Quick results were wanted and expected for publication in the commissioner's report for 1900.

Examiner Skinner organized the Classification Division with two assistant examiners from his former division and two women clerks. Two months later two other assistant examiners and one more woman clerk were assigned to classification.

The classes selected for revision were those included in division 29. The copies of patents of the selected classes belonging to the public search room were taken to the Classification Division and on them the work of revision was begun.

The division was under great pressure to secure results. Congress had provided for 18 additional men for classification, although only 5, including 1 principal examiner, had been assigned to this duty, the remainder having been turned into examining divisions in the effort to bring up the current work. The arrearage of the office was alleged to be largely due to the difficulties of search owing to inadequate classification. Neither Examiner Skinner nor any other member of the division had any special knowledge of classification, and their notions of the subject were colored by their prior experience with the existing office classification. Some general rules were hastily formulated and applied to the revision of the classes under consideration. Revision of class 20, carpentry, changed to class 20, wooden buildings, was completed March 14, 1899; class 108, roofs, March 28, 1899; class 145, woodworking tools, August 1, 1899; and class 147, coopering, September 19, 1899.[2]

Probably no one in the Patent Office, from the commissioner down and including the examiner of classification, comprehended the magnitude of the task undertaken by the Classification Division in the beginning or realized that classification, even of things that are differentiated by definite natural laws, is one of the most difficult branches of the metaphysical sciences; much less did any appreciate the difficulties not only of classifying under unerring principles the existing productions of the human

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[1] *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That for the purpose of determining with more readiness and accuracy the novelty of inventions for which applications for letters patent are or may be filed in the United States Patent Office, and to prevent the issuance of letters patent of the United States for inventions which are not new, the Commissioner of Patents is hereby authorized and directed to revise and perfect the classification by subjects matter, of all letters patent and printed publications in the United States Patent Office which constitute the field of search in the examination as to the novelty of invention for which applications for patents are or may be filed.

SEC. 2. That for the purpose of enabling the Commissioner of Patents to carry out the provisions of this act the Secretary of the Interior is hereby authorized to appoint from time to time, in the manner already provided for by law, such additional number of principal examiners, assistant examiners, first-class clerks, copyists, laborers, assistant messengers, and messenger boys as he may deem necessary: *Provided, however*, That the whole number of additional employees shall not exceed three principal examiners, two first assistant examiners, two second assistant examiners, six third assistant examiners, five fourth assistant examiners, four first-class clerks, four copyists, six laborers, six assistant messengers, and six messenger boys; that the annual expenses for this additional force shall not exceed the sum of $62,880.

[2] The first classes were revised with greater celerity than any subsequent ones.

mind relating to applied science and industrial art, but also providing a classification for receiving the illimitable number of arts and instruments now unknown but to be created in ever-increasing ratio. It may be said without fear of contradiction that the justly celebrated classification of Linnæus, applied to some 10,000 known plants, differentiated by laws of nature, in nowise presented such difficulties as the classification of the known and to be known creations of the human mind in the field of industrial arts.

In the meantime the examiner of classification was obliged to formulate the plan he proposed to follow, and work out the principles of it for the guidance of the classifiers and information of the office generally and the public. Many examiners disapproved of the revision of their classes by another examiner, and some were rather outspoken in their opinions that no person other than the examiner in charge of a class was competent or should be allowed to classify it. The Classification Division was viewed somewhat in the light of an interfering intruder.

In an endeavor to apprise the office and the public of the principles by which the Classification Division was to be guided in carrying on the work of revision, to avoid cross purposes and misunderstandings, a written statement entitled "Plan of Classification of Patented Inventions" was hastily prepared and published in pamphlet form by the Government Printing Office in 1900. The Plan of Classification of Patented Inventions was written under pressure by Examiner Skinner, in the beginning of his experience in connection with classification duties, with little previous knowledge of the principles of classification in general and without knowledge of or experience with any classification of subjects of invention other than that in use in the Patent Office, and without having given any thought to the subject except such as he had been required to give in common with most examiners in keeping their own classes so subdivided as to make a reasonable search within a reasonable time possible.

The logical principle that there can be no classification without definition had been recognized as soon as revision was undertaken. The necessity of cross referencing was a matter taught by long experience, if not obvious; it had been put in practice, however, only by the examiners in their own classes. There had been no established practice of cross referencing. The classes and subclasses when revised were, therefore, defined, and cross references were mounted. The definitions, however, as will be perceived by inspection and comparison with later classes, were naturally somewhat inadequate and were often substantial repetitions of titles or examples of circulus in definiendo. Practically no directions were given for search in other classes and cross referencing was mainly confined within the classes under revision. Material not peculiar to the class of inventions under revision was left where found, except in glaring instances, where a class and subclass properly entitled to receive it existed in the old scheme of classification.[1]

In the beginning of the work of revision, there may have been some lack of appreciation of the necessity of breaking away from the influence of the old classes and forming new ones having different bonds than had previously held into one class a certain group of patents. Experience had not at that time taught that the plan could not be carried out merely by redividing an existing class, useful though such a work might be. These early and quickly revised classes are, therefore, newly subdivided old classes rather than new classes fitted into the plan. The very rapid increase of patents in the last 10 or 12 years has so accentuated the impossibility of maintaining in any large proportion the old classes as the main subdivisions of a classification, that the necessity of a broader, more comprehensive view of the field of industrial art in forming a unit of classification is much more apparent than it was 12 years ago.

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[1] This latter practice has been deemed advisable or necessary in many instances until such time as a fuller knowledge of the material to be classified should enable such things to be gathered and classes established to receive them.

The number of men assigned to classification work rose to as many as 12 to 15 at times during the years 1901–1903; between 1904 and 1909 the average number of assistant examiners was about 6, while at times the work of the division was at a standstill, assistants having been withdrawn for duty in examining divisions. At one period the examiner of classification was in charge of an examining division as well as of the Classification Division. In many instances examiners have resigned, leaving unfinished classification work, and in a few instances they have been assigned permanently to examining divisions while in the midst of classifying, presumably because of urgent necessity. Such removals have necessarily been expensive, a large portion of the time of the assistants spent in classifying having been thus rendered of little value to the office.

Early in 1909 Examiner Skinner was appointed to be an examiner in chief, and the Commissioner of Patents designated Examiner E. D. Sewall his successor as examiner of classification. It has been deemed inadvisable to seek for classifiers of patents from among persons unskilled in examining and searching patent claims. The Commissioner of Patents has not known how to procure ready-made skilled patent classifiers. There probably are none. It is necessary, therefore, either to procure persons skilled in the science of classification and teach them patent law and practice, or else take persons already experienced in the patent law and office procedure and do the best possible to teach them classification. The situation may be unfortunate, but so it is. And thus it has come about that the examining force has been drawn upon for classifiers. The examiner of classification is a target for criticism within and without the office. The labor is continuous, the duties multitudinous, and the task discouragingly vast. Only for one without any apprehension of the nature of the work can the office be anything but arduous.

In July, 1909, the commissioner was able, by reason of an increase of force provided by Congress, to detail 15 additional assistants to the work of classifying. These 15 were immediately assigned to the work of revision. Within that period 8 of these men have resigned to accept other positions or to practice, and 1 has unfortunately died, all but 1 leaving unfinished work, to the great loss of the office.

All of these men were selected by the examiner of classification in the effort to secure the most suitable assistants available. In general, the Commissioner of Patents approves his selections. In selecting men the effort to get the best is hampered by certain considerations, namely, (1) that the drafts shall be distributed so as not to cripple overmuch any one division by selecting more than one, or by selecting from a division which has recently lost men by resignation or transfer to other divisions or to classification work; (2) that divisions in arrears shall not be drawn on; (3) that divisions having classes of invention of simple character[1] shall be drawn on in preference to those dealing with complicated mechanisms; (4) that divisions shall not be deprived of their ranking first assistants. The endeavor has also been to select men who are not bitterly opposed to taking up classification work, To determine this is somewhat difficult, and if adhered to always might result in getting no one.

THE PURPOSE OF A PATENT OFFICE CLASSIFICATION.

It should be self-evident that a classification is useful in the proportion that it is adequate to the purpose for which it is intended; that any number of objects or ideas may be classified in a number of different ways to serve a number of different purposes; but that only one mode of classification is best adapted to serve any one purpose. It is conceivable that a Patent Office classification may have as its purpose to disclose the patents granted to persons having any given name; to the citizens of any given State; to the citizens of any given country; at any given period; for any given

[1] Not necessarily that the questions of patentability shall be simple, because frequently the inventions easiest to comprehend mechanically present the toughest questions of patentability.

invention in industrial art. In fact, the patents granted by the United States are sought to be classified in all of these ways. The classification by inventions is the only one that presents serious difficulties, and that is the classification that an attempt is now being made to revise and improve.

It is apparent that subjects of invention, also, may be classified in different ways to serve different purposes. A classification of internal-combustion engines that would suit a prospective purchaser or a student of motors would be unsatisfactory to the manufacturer of them. So also, one that answers the purpose of either of these would not be suitable for the purposes of the inventor.

It may be first assumed that the interested person is a maker of engines who is intent on producing the best engine at the lowest cost. There are many parts entering into the construction of an engine and also many methods of manufacture and many instruments for carrying out the many methods. The manufacturer desires to form a judgment not only of those parts and assemblages of parts which are peculiar to internal-combustion engines, which distinguish them from every other engine and every other apparatus, but also of those parts which, although not peculiar to them, he must attach to or associate with the engines when he places them on sale. He desires to know what is the best carburetor for supplying fuel; the best radiator for cooling the jacket water; the best pump for circulating the jacket water; the best lubricator for oiling the engine; the best spark plug for ignition purposes; the best batteries, dynamo, or magneto for generating current for the ignition; the best circuit breaker for interrupting the current between generator and spark plug; the best transmission gear; the best alloy from which to make the gears; the best gear cutter for cutting them; the best method of casting the cylinder, of boring and grinding it; and so on interminably. None of these parts and methods is peculiar to internal-combustion engines. Carburetors are useful with gas stoves, furnaces, and illuminators; radiators as condensers for steam engines, stills, house warmers, refrigerating plants, etc.; pumps are useful for removing oil from tanks or water from wells or for circulating oil for lubrication, etc.; spark plugs for exploding shells and mines, igniting gaslights, or producing electric oscillations generally, etc.; batteries and dynamos are useful for generating current for lighting, heating, or power purposes, etc.; automatic circuit breakers are useful for flashing lamps, striking gongs, playing pianos, selecting punches in a punching machine, etc.; transmission gears are useful for sewing machines, automobiles, lathes, etc.; alloys are useful for coins, bearings, tools, fillings for teeth, etc.; gear cutters may be used for cutting any kind of gears, casting methods for making stoves, flatirons, dumb-bells, etc.; boring instruments and grinders may bore and grind guns, pump cylinders, bearings, etc. A classification under the head of internal-combustion engines that would assemble all inventions useful to the maker of them would be a suitable one for the purpose of the manufacturer in seeking to find what has been done hitherto, that is in any way related to the making of internal-combustion engines. Let it be also assumed that the engine manufacturer fails to discover any jacket water cooler for gas engines that satisfies him, and that he therefore applies for and obtains a patent for a jacket water cooler intended to be used for a gas engine.

Next, assume that an inventor ask the sovereign people to grant him a monopoly for an apparatus adapted to continuously interchange heat between two fluent substances. Sovereign people must then consult his inventory. He discovers, it may be, that he has not any list of heat interchangers, so he sells the monopoly; or it may be that the appearance of the contrivance arouses such recollections in his mind that he asks the inventor what it is for. Inventor replies, "For any purpose interchange of heat is adapted to attain. I have used it for warming my house, for condensing alcohol vapors in my distillery, and to cool my cold-storage room." Sovereign people then looks on his lists of house heating, alcohol, and refrigeration monopolies; although he finds there things very like it he does not find the precise thing

and so grants the monopoly. After a while, engine maker comes along and says: "Sovereign people, you granted me a monopoly of this cooling coil which I use in my internal-combustion engine, and here now you have granted inventor a monopoly for the same thing. How can we both have, and not have, the same monopoly?" Sovereign people looks up his list of internal-combustion engine monopolies and says that maybe his stock clerk has made his lists wrong, but to let his legal advisers settle it, the two grantees to stand the cost.

In this instance it appears that the classification that suited very well the purposes of the manufacturer of internal-combustion engines as a manufacturer, did not suit so well his purpose as a patentee, nor did it suit so well the aim of inventor to get a valid patent, nor that of sovereign people to grant only one monopoly for one invention.

The purpose of a Patent Office classification of the "useful arts,"[1] under any examination system can be only to aid in forming a judgment respecting the patentability of any alleged invention whose patentability is in question. This, also, should be self-evident. Different aspects of this purpose are (1) the duty of the Commissioner of Patents to refuse patents for inventions that are not new; (2) the desire of inventors to find out whether their inventions are new; (3) the desire of manufacturers to find out if any given means they wish to make use of would infringe a patent; and (4) the desire of one who has been sued or threatened with suit for infringement of a patent to discover an anticipation.

A classification that possesses the essentials of an instrument to aid in the application of the principles of patent law may not serve any better the purpose of him who desires to learn all that is to be known about a trade or industry than an encyclopedia of trades would serve the purpose of an instrument for the determination of patentability.

It has not been deemed to be the duty of the Patent Office to be able to refer every inquirer to one group containing everything ever patented that makes any use, for instance, of titanium or waste sulfite liquor, etc., or to all patents for means that may be useful in making certain articles, as files, or that may be useful in any one trade or industry, or in any manufacture, as, for example, in connection with the manufacture of internal-combustion engines. The Patent Office should be able to say, "All things peculiar to internal-combustion engines are in class 123, internal-combustion engines. All things peculiar to heat interchangers (which are commonly used with engines) are in Class X. All things peculiar to carburetors are in class 48, gas, heating and illuminating. All things peculiar to power transmission are in class 74, machine elements," etc. Collection and publication of descriptions of not only those processes and instruments that are peculiar to an industry, but also all those that may be useful in it or to those engaged in it, but which are also useful in other industries and to those engaged in them, has not been thought a desirable work for the Patent Office to undertake, however valuable such a collection would be to manufacturers. Such would be rather within the province of the encyclopedist. It would be a work of supererogation for the Patent Office. The aim of every Government bureau is to concentrate and direct its energies toward the accomplishment of the purpose for which the legislature established it, and not to permit them to be diverted therefrom or to spill over into other areas of possible usefulness. The legislature will always provide means to carry on other work if it deems that public interests demand it.

PRINCIPLES OF A PATENT OFFICE CLASSIFICATION.

Having determined that the purpose of a Patent Office classification shall be to aid in forming a judgment respecting patentability, it follows that the principles that have been developed and applied in forming such a judgment must be kept

[1] Constitution, Art. I, sec. 8.

constantly in view in the work of classification. In accordance with the correctness of the theory of patentability adopted, and the correspondence of the classification with that theory, will the latter be appropriate to its purpose? Opinions are not uniform on all the principles governing patentability; hence disputes will always arise regarding the appropriateness of a patent classification, even though the purposes of it be agreed upon. Judicial precedents, from among which the weight of opinion may be selected, the settled rules of law, and the known laws of thought make it possible to state principles of Patent Office classification, even though the application of those principles may be often exceedingly difficult, particularly in cases wherein the principles of patentability have been erroneously or loosely applied.

The fundamental conditions precedent to the grant of a patent required by statute are that the means for which the patent is sought, in addition to lying within the "useful arts," shall be new, useful, and the result of invention.[1] The Commissioner of Patents, acting through the primary examiners, determines the novelty, utility, and inventive quality of every industrial means for which a United States patent is sought. Determination of novelty requires a comparison of the claimed means with all that has been previously made known of like character. Although utility and invention are susceptible of being judged of prima facie, or from the knowledge imparted by the full disclosure in the application that is required by law, yet, owing to the limited portion of all knowledge within the comprehension of the best intellects and their somewhat uncertain grasp of abstract truths, both utility and invention may be more readily and accurately estimated in the light of concrete evidence of prior accomplishment for similar ends. Patent Office classification is primarily adapted for aiding investigation concerning the newness of any alleged invention but influences to some extent inquiries into the other fundamental elements of patentability. Conversely, utility and invention also influence to some extent a Patent Office classification.

Novelty, utility, and invention—their sum representing patentability—are fundamentally judged of without reference to each other, notwithstanding their mutual relationship to patentability and classification. The mere novelty of an industrial means clearly has no bearing on its utility or inutility, its beneficence, or malignity. A new engine designed to move perpetually is as useless as an old one designed to achieve a like result; a new gambling device or instrument of murder as harmful as one already under ban of the police. Likewise, an industrial means may be as truly the product of one's independent inventive thought, though known to others for a thousand years, as if it came newly into existence by that inventive thought. A new instrument having no other use than gambling or murder may be the result of a high order of creative thought. Or a means may be both new and useful but obvious to those who chance to perceive the desirability of the result to be reached by it, and not, therefore, the product of inventive thought.

Determination of the presence or absence of the quality of invention requires possession of accurate notions of the fundamentals of lawful monopolies, of useful arts, a knowledge of the science of the operations of the understanding—of the laws of thought or customary courses followed in the intellectual processes of sane minds—a familiarity with the rules of interpretation of legal instruments, and good powers of analysis and abstraction.

Determination of the presence or absence of the quality of utility in an industrial means requires merely ability to comprehend the means for which a patent is claimed and its uses, and to distinguish between that which is essentially harmful to the public welfare and that which is not, or that which is operative to fulfill its purpose and that which is not.

It is assumed that the primary use of a Patent Office classification is to aid in judging of the existence of the quality of newness, within the meaning of the word "new"

[1] Sec. 4886, Revised Statutes.

in the patent statutes, in any means for which a patent is sought. It is also assumed that "new" means new in itself, not merely new in use; that the combination of steps of a process for which a patent is sought must not have been conceived of and practiced before, and that the combination of elements composing an instrument claimed must not have been known before.

Determination of the novelty, thus understood, of an alleged invention requires that the searcher first form a mental image of the means claimed, so that he will be able to recognize it when illustrated in widely different forms, and then make an exhaustive investigation into all past achievements of a like character in the industrial arts that have been available to public apprehension without distinction of persons. The vast expanse of the industrial arts, the refinements and niceties to which they have attained, and the illimitable combinations and permutations of substances, conditions, acts, mechanical elements, processes, and instruments susceptible of being assembled render the thorough investigation into the novelty of an alleged invention that the gravity of a public grant of a monopoly deserves no simple task under conditions the most favorable. Without a classification of the subjects of invention, appropriate to and coordinated with principles of patentability announced to be followed in the relationship of novelty to utility, sufficiently refined to divide the entire field into relatively small units, sufficiently uniform in principle to guide the searcher to the appropriate unit, and with such a basis of division as will bring those means that have the largest number of elements in common together in the several subdivisions, it would be impossible to judge of the newness of the means defined in each of the multiplicity of claims in the 70,000 applications now filed annually with any reasonable approximation to certainty within the brief space of time possible to be allotted to each application in order that such speedy action may be had as the interests of the public, including those of the inventor, demand.

In formulating a classification it is of the utmost importance to select as a mark, characteristic, or basis, by which to group the ideas or objects to be classified, one that will bring together in groups things that are nearest alike for the purpose in view, that have the largest number of common features. In the paragraphs immediately following the attempt is made to state the basis of the proposed Patent Office classification and the reasons for adopting it.

Desire is the instigation of all invention. Ultimate utility to the human race is the warranty of all patent law, and that ultimate utility is the estuary into which the waters of all the rivers, brooks, and streamlets of invention ultimately pour. The streamlet ends at the brook, the brook at the river, and the river at the estuary. In the useful arts there are innumerable intermediate utilities that converge, unite, and react to produce the ultimate ones, and upon these intermediate utilities the mind of the inventor is actively centered. A baking oven may have as its ultimate purpose the satisfaction of the desire of men to continue existence. The inventor of the oven did not center his mind on the physiological processes whereby bread nourishes the body, nor even upon the composition of bread, the methods of mixing the dough, or the process of baking it. His problem was to convert the chemical energy latent in fuel into energy of heat and to apply the heat to an oven in such manner as to conserve it and maintain an even temperature that the baker's experience has informed him is essential.

Utility, the production of some effect to satisfy human desire, is, then, a preeminent standard by which all inventions are measured in the larger relations of patent law and public policy. The first inquiry about any process or instrument is what is it for, what good does it accomplish? The statutory prerequisite of utility is therefore a suitable characteristic by which to group the means of the useful arts, if the adoption of it brings together in groups those having most numerous characteristics in common.

As has been intimated hereinbefore, nearly every means of the useful arts has some ultimate utility in the satisfaction of human desire, which, if adopted as a characteristic for classification purposes, would bring together very unlike things, and that back of that may be many intermediate utilities. To illustrate by a homely example, let it be assumed that an ultimate desire sought to be satisfied is a desire for a fatty food. That desire may be satisfied by the consumption of butter. The desire for butter may be satisfied by the separation from the constituents of milk and an agglomeration of the fat therein. Now, butter may be made by more than one process and by more than one instrument. It may be made by withdrawing the watery and water-dissolved constituents from the fat by absorption, as by pouring milk on blotting paper; or it may be made by violently agitating a mass of milk or cream in a churn. It is clear that there is not such similarity between the absorptive instrument and the churn as would teach one to derive one invention from the other. The two instruments bear no relationship on the causative side, but only on the side of the effect or common product, which in each case is an accident of absorption and agitation, respectively, not a necessary result. Getting back to their immediate activities, it is perceived that in one case matter has been brought within the influence of the law of capillary attraction, and that the immediate utility of the instrument is that of absorbing liquids. In the other case, it is perceived that fluent matter has been subjected to mechanical force, and that the immediate utility of the instrument is to agitate the material submitted to its action.

To take a still cruder example: A hammer is a good instrument with which to crack walnuts, and one may say it has utility as a nut cracker, or one might say even that it was a good food preparer; but the hammer has also utility as a stone breaker, and might be said to be a good road-making tool; it also has utility as a nail driver, or housebuilders' or shoemakers' tool, or as a forging tool and instrument of the blacksmith's art, and so on. Back of all these utilities is the more fundamental one, namely, that of striking a blow, a utility which persists in the tool even when it accomplishes those more remote utilities that are mentioned.

From the above crude illustrations, it is clear that if any of the remote utilities were adopted as the basis of assemblage and division, things very unlike would be brought together and things very like would be separated, whereas, if the immediate utilities were adopted as a basis of classification like things would be assembled.

Prior classifications of patents have not apparently had any fixed bases. In general, inventions have been classified in accordance with the associations for which the patentees designed them. Frequently some ulterior or accidental use, either the ultimate one for which it was designed or a use approximating that ultimate use, has controlled the classification. Thereby the easiest course was followed. The classification grew through the labors of many different examiners. Many different minds independently considering segregated instances would hardly reach a common basis. Furthermore, much varied material common to many industries exists for which no classes have ever been provided. Under an industrial classification such classes would hardly be deemed necessary. Yet a very casual investigation of the contents of many so-called "art" classes shows them to contain material far more closely related in structure and mode of operation to other material in other classes than to the remainder of the contents of the class in which it has been placed. The following examples from as yet unrevised classes illustrate how classification of apparatus on the basis of some remote utility is likely to cause duplication of patents for instruments adapted to be applied interchangeably to achieve like results.

In 135 U. S., 227, patent No. 72969, for a billiard cue rack, was declared invalid in view of prior patents for revolving dining tables and bottle casters. The Chief Justice said:

"This case falls within the familiar rule that the application of an old process or machine or apparatus to a similar or analogous subject, with no change in the manner

of application, and no result substantially distinct in its nature, will not sustain a patent, although the new form of result may not have before been contemplated."

The patent was for a rotary rack designed to hold billiard cues. It was classified in the Patent Office on the basis of its association with amusement apparatus in the class of games and toys, billiard appliances. Defendant contended that the patented device was not the result of invention in view of prior rotary article supports of the character mentioned. The court said:

"These tables and casters were so arranged as to revolve about a common center and bring around dishes and decanters in that way as desired. The office performed was the same in respect to dishes and decanters as that performed by complainant's contrivance in respect to cues."

Casters are classified on the basis of use as kitchen and table articles, and tables are classified on the basis of use as articles of household furniture. If the classification had been on the more immediate utility of supporting articles in such manner that they could be brought conveniently to the desired point by the rotations of the support, it is plain that the patented cue rack and the similar rotary supports would have come into one class or at least into allied classes based upon the same generic utility or function.

In 179 Federal Reporter, page 79, patent No. 701544, for a guide for punching presses designed to punch metal, was declared invalid because anticipated by patent No. 634246, for a feeder for perforating machines for perforating paper.

The first of these patents was at the time of its allowance classified on the basis of metal working because designed for the cutting and punching of metal. The second was at the time of its allowance classified on the basis of manufacturing paper into formed products because designed to operate upon paper. In the process of revision these two patents have fallen together in the same class and subclass upon the more direct basis of the immediate utility or immediate function performed.

In 177 Federal Reporter, page 413, patent No. 814803, for a concrete-mixing machine, was declared anticipated by the court by structure shown in patent No. 661847, for an apparatus for mixing tea. Mixing by agitating the materials to be mixed has never been the subject of a class in the Patent Office classification. Under a purely industrial classification it might not be deemed needful or desirable. As a great many different substances are required to be mixed and the mixing may be carried out by the application of similar physical laws, mixing apparatus has become very widely distributed. When a class now in process of formation shall have been completed the concrete mixer and the tea mixer under consideration by the court in this case will fall together in the same or closely related subclasses of one class.

For the purpose of illustrating to the eye the diversified classification of instruments having similar structure and similar modes of operation under a basis of remote or ulterior utility, views have been taken from patents in different classes and assembled together on the same page. These illustrations are merely exemplary of what might be set forth at great length. The selections made are of the simpler sort in order that the matter sought to be illustrated may be easily apprehended.

Figure 1 shows views taken from the following patents:

No. 82356, improvement in churns, in class 31, dairy, subclass 18, working-body churns.

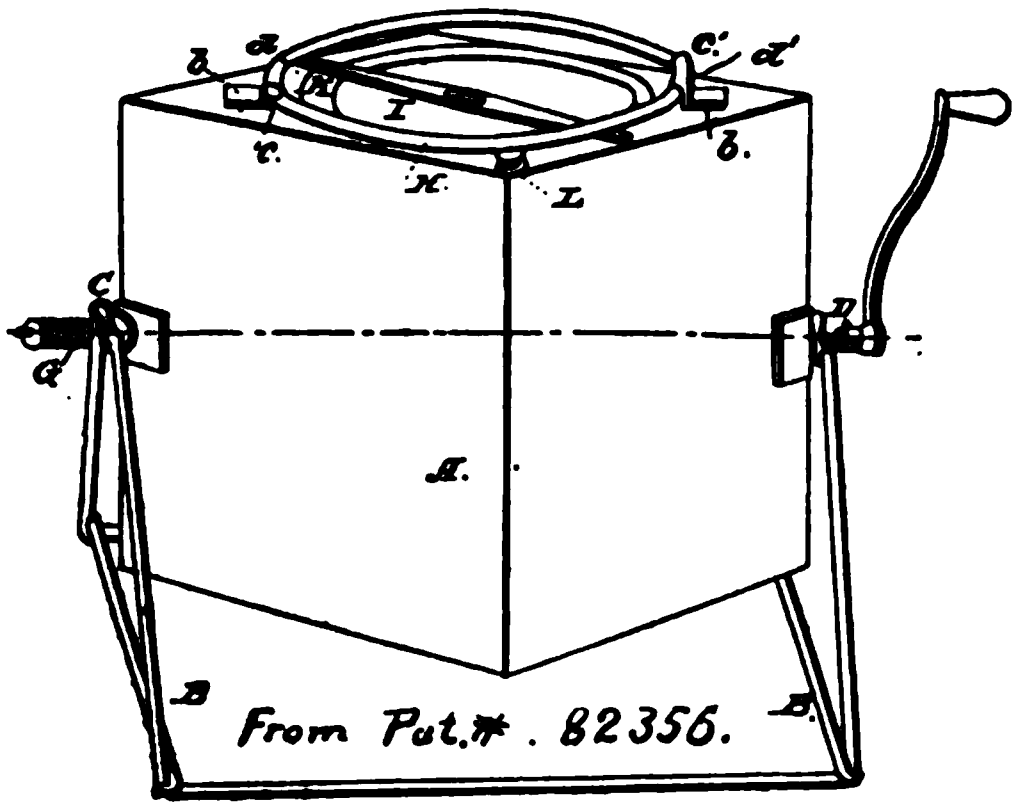
No. 195027, improvement in washing machines, in class 68, laundry, subclass 18, washing machines, cylinder.

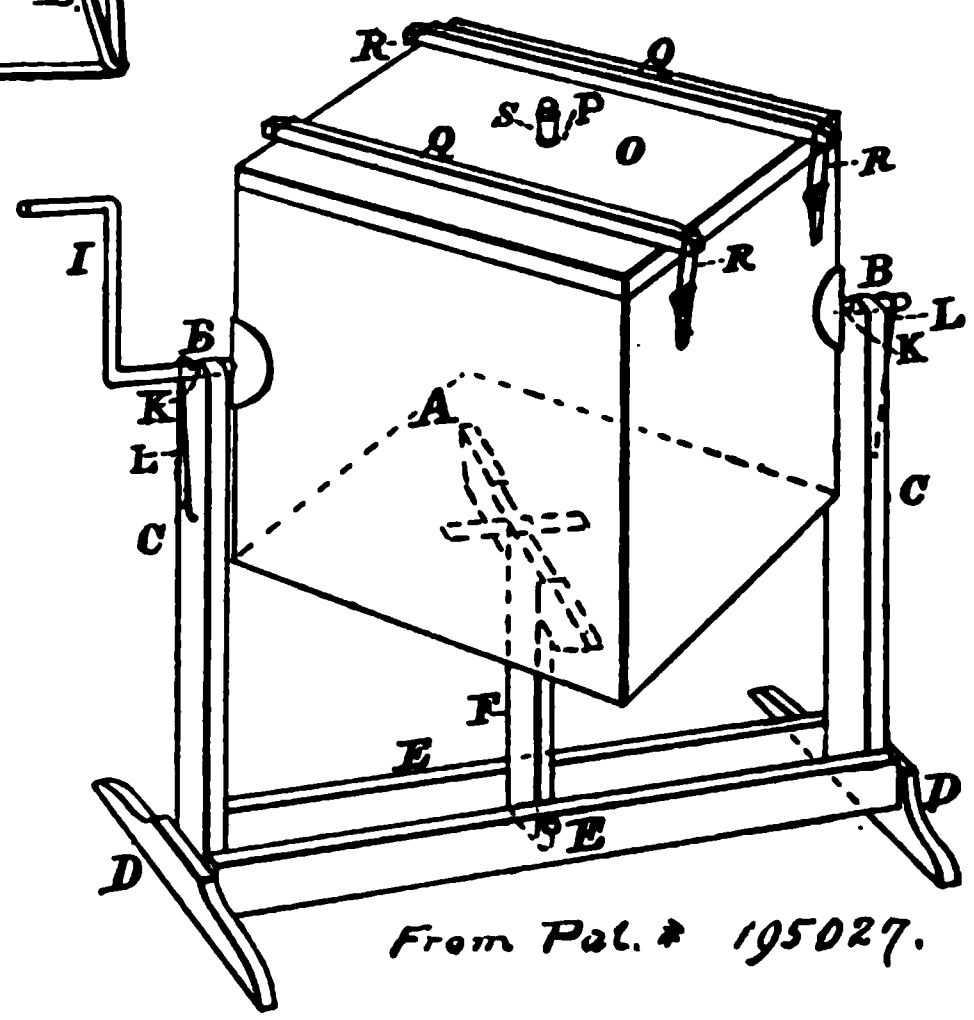
No. 297002, apparatus for mixing solids and liquids and for other purposes, in class 83, mills, subclass 73, mortar mixers.

The first three claims of the last-mentioned patent are as follows:

"1. The method of mixing various materials by rotating them in such way that the particles will all be projected constantly and regularly toward a common point, substantially as described.

"2. A box or receptacle journaled as set forth, so that in rotating the corners or points of the box or receptacle farthest from the axis of rotation move always in the vertical plane passing through the center of the box or receptacle, substantially as described.





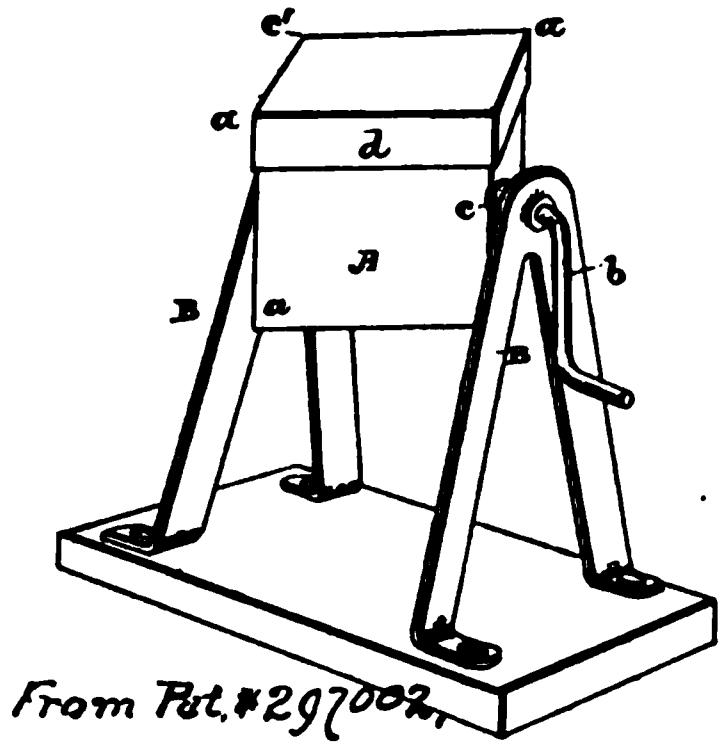


FIGURE 1.

"3. A box or receptacle of cubical, rhombic, or similar form, hung on trunnions attached at the middle points of two diagonally opposite edges, substantially as described."

It is plain that the first mentioned of these three patents was classified in dairy because the device was called a churn and was designed to be used for making butter.

It is equally plain that the second of these patents was classified in laundry because it was described as a washing machine and designed to be used for washing, and that the third was classified in mills because the most prominent use stated was that of mixing lime, cement, and sand. Either one could be used for the purposes of the other, the shape, mode of operation, and mechanical principles involved being the same in all of them. These three patents will fall into the same subclass when a class now in process of formation shall have been completed.

In this connection it may be said that up to the present time patents have been selected in considerable numbers for this purpose from 30 different classes, some of the classes which are richest in material of this sort being the following:

Class 17, butchering; 23, chemicals; 31, dairy; 34, driers; 49, glass; 62, refrigeration; 65, kitchen and table articles; 68, laundry; 83, mills; 87, oils, fats, and glue; 91, coating; 94, paving; 95, photography; 99, preserving; 127, sugar and salt; 130, thrashing; 131, tobacco; 149, hides, skins, and leather; 195, alcohol; 196, mineral oils; 209, carbonating beverages.

Considering patent No. 82356, illustrated in figure 1, it seems to be apparent that if cream be placed in the receptacle and rotation be imparted to the receptacle a churning operation will be performed. If sand and cement be placed therein, a mixing operation will be performed. If soiled clothing and soapy water be placed therein, a cleansing operation will be performed. If solid friable material be placed therein, it will become comminuted. If nails and liquid varnish be placed therein, the nails will become coated. If metal castings be placed therein, they will be polished, and so on. Thus it may be seen that many different ultimate effects may be produced by a means for imparting agitation to materials.

Figure 2 shows three views taken from the following patents:

No. 874343, for a liquid ripener, pasteurizer, and cooler, in class 210, water purification; subclass 20, liquid sterilizers.

No. 484955, liquid cooler, in class 62, refrigeration; subclass 6, ice making.

No. 243686, evaporating apparatus, in class 127, sugar and salt; subclass 9, evaporating pans.

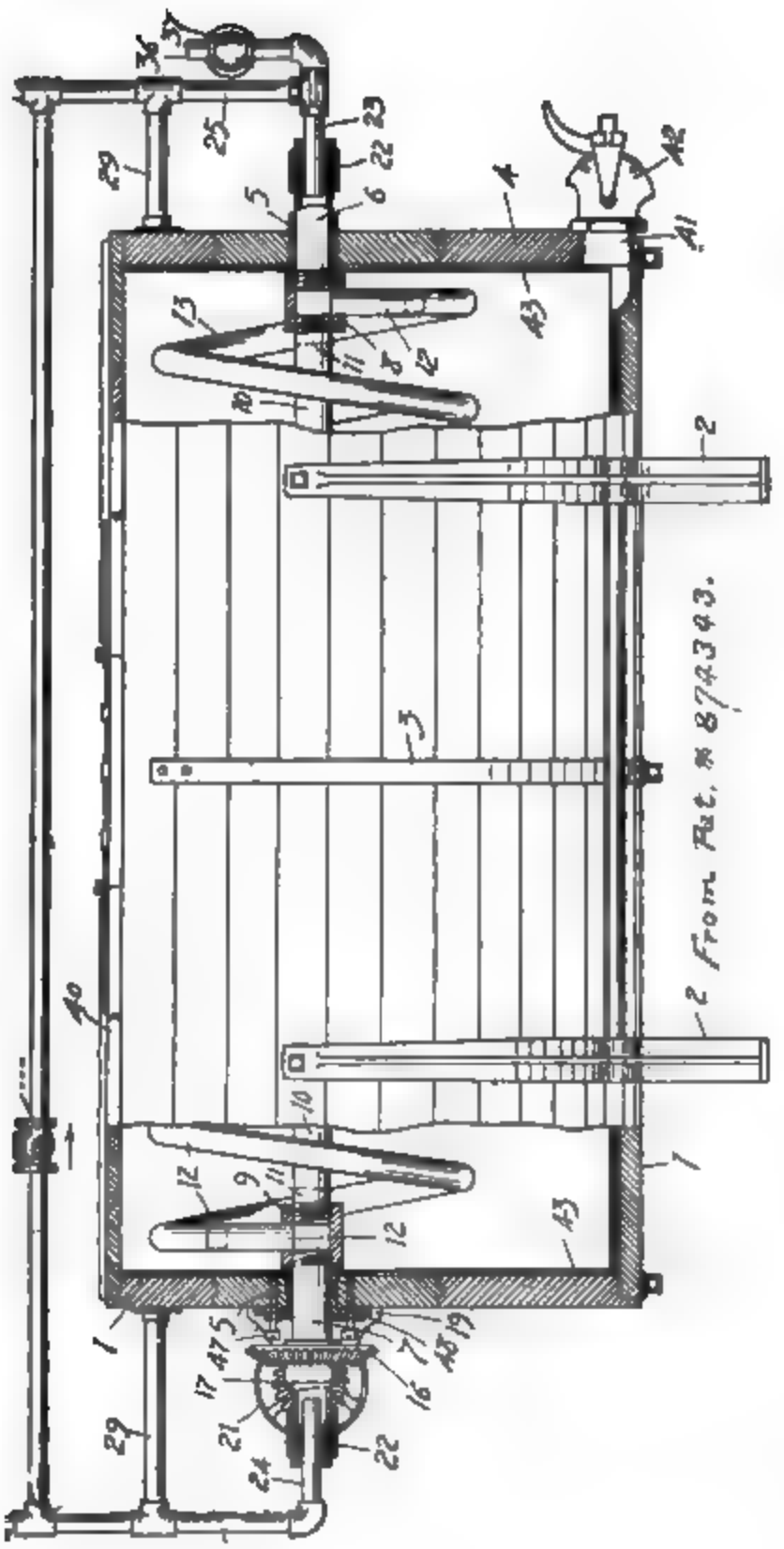
The first claim in patent No. 874343 is as follows:

"1. In an apparatus of the character described, the combination of a suitable receptacle for containing the liquid to be treated, a pipe therein in the form of a helical coil, connections with the ends of said pipe extending to the outside of the receptacle, means for rotating said coil, and means for conducting a heating or cooling medium into one end of said coil and out from the other end thereof, substantially as described."

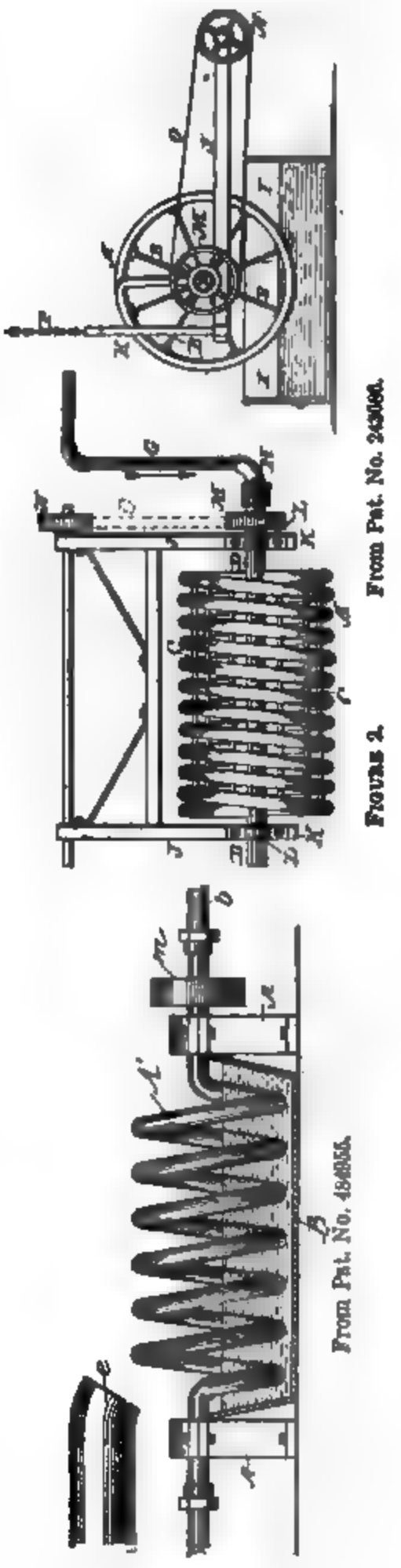
It is apparent that these three similar instrumentalities were separately classified on the basis of the accident of use alleged in the specification. The first mentioned of the three, being for the purpose of sterilizing milk or other liquids, was classified as a liquid sterilizer. The second, being said to be for the purpose of cooling liquids, gases, vapors, or other fluids by the evaporation of water, was classified upon the accident of its adaptability to reduce temperatures, and placed, therefore, in refrigeration; while the third, having been described as particularly useful for evaporating a liquid, was classified as an evaporating pan.

It is apparent enough that the same principle and mode of operation are immanent in all, namely, that of rotating a coil through which a fluid is designed to be passed in juxtaposition with a fluid in the container, and that if there is any difference of temperature between the fluid within the coil and that within the container there will be a tendency to equalize the temperatures. There may be several ultimate effects produced by transfer of heat in this manner, as is illustrated by the ulterior purposes stated in the several patents above. There is, however, but one common and necessary function produced by all of them, and that is transfer of heat. These three patents will fall together in one subclass in a class now in process of formation in the Classification Division.

Thus far in the formation of a class based upon heat interchange, patents have been drawn in comparatively large numbers from 34 different classes. Some of the classes which are richest in this material are as follows:



From Pat. No. 374343.



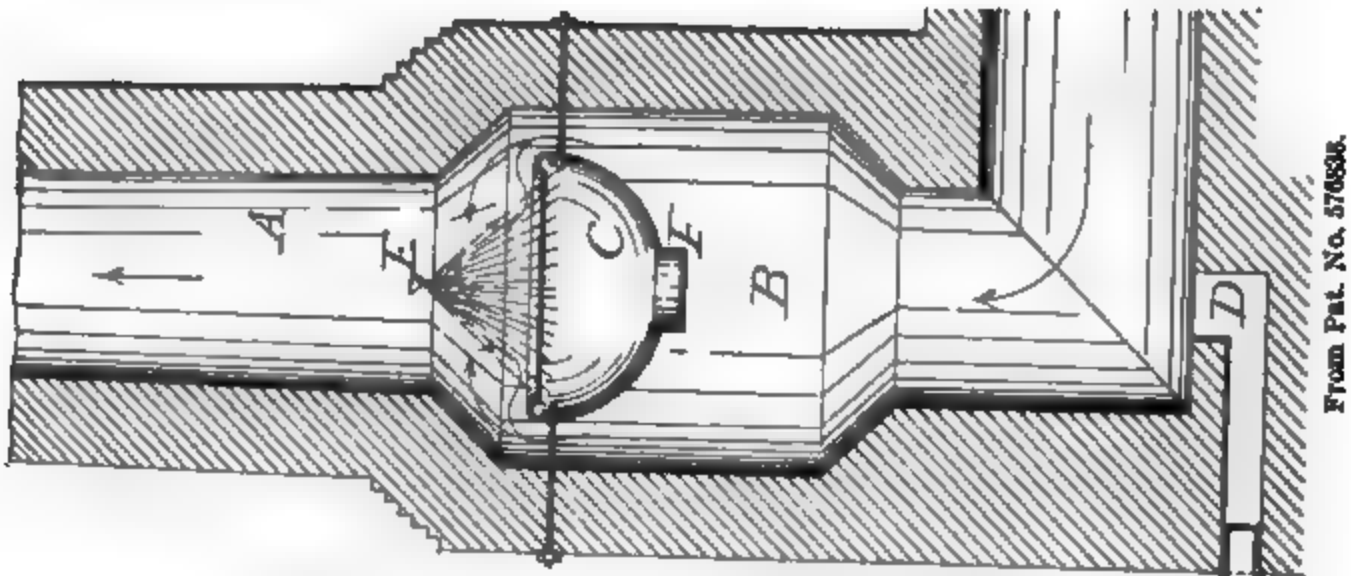
From Pat. No. 484955.

FIGURE 2.

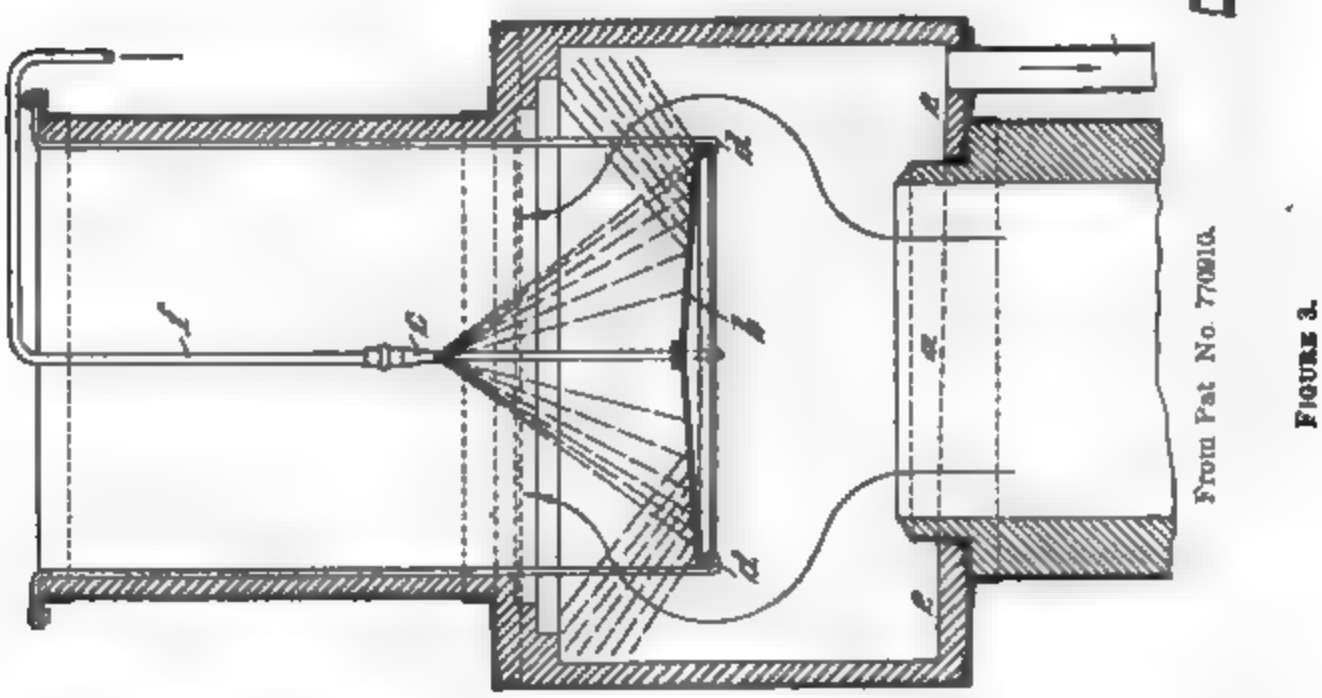
Twenty-three, chemicals; 31, dairy; 34, driers; 48, gas, heating and illuminating; 52, explosives; 53, domestic cooling vessels; 62, refrigeration; 87, oils, fats, and glue; 98, pneumatics, under ventulation; 99, preserving; 126, stoves and furnaces; 127,

sugar and salt; 195, alcohol; 196, mineral oils; 203, ammonia, water and wood distillation; 210, water purification; 237, heat distributing systems.

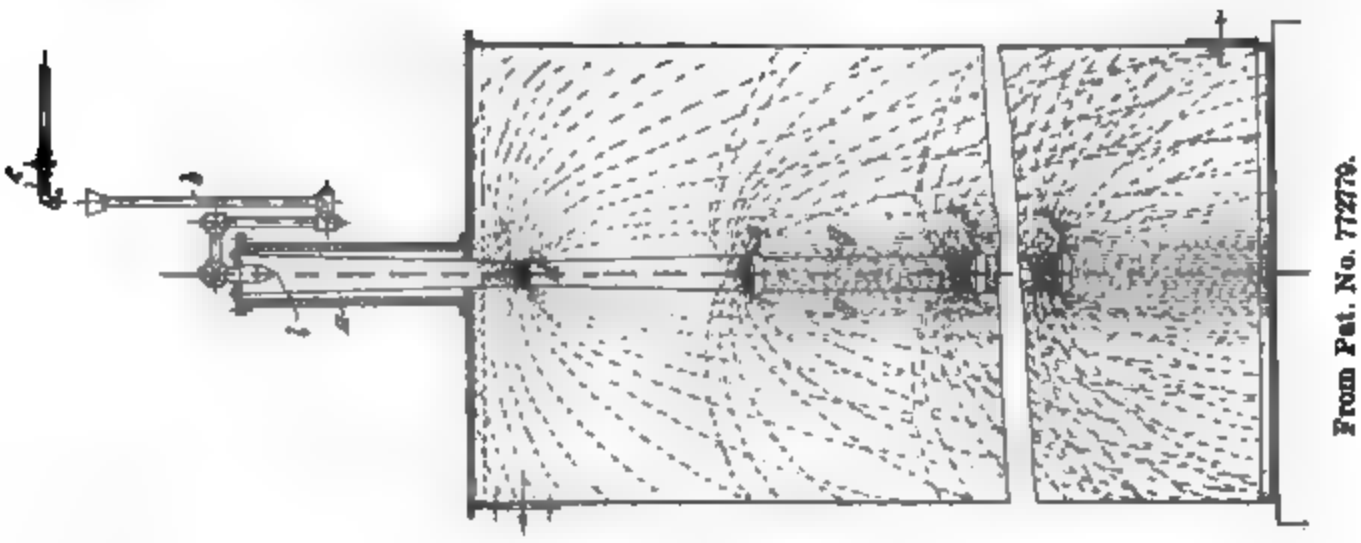
Figure 3 shows views taken from three patents, as follows:



From Pat. No. 576836.



From Pat No. 770910.



From Pat. No. 772279.

FIGURE 3.

No. 772779, gas washer, in class 48, gas, heating and illuminating, subclass 135, purifiers, washer and scrubber, spray;

No. 770910, cooling device for blast furnaces, in class 75, metallurgy, subclass 30, fume arresters;

No. 576838, apparatus for removing impurities from smoke, in class 110, furnaces, subclass 183, smoke purifiers.

The first of these patents is for means for the washing of illuminating gas and was therefore classified in accordance with the art or industry with which it was designed by its inventor to be used and in accordance with the use stated in the specification. The second was also classified in accordance with a use as an accessory to a blast furnace. The sulphurous gases contained in fumes passing from the furnace were expected to be absorbed by the water and the solid particles washed out of the gases as they escaped through the spray. The third patent was classified as an ordinary smoke purifier because for means designed to be used with an ordinary combustion furnace. The gases of combustion passing through the water spray would have the soot and sulphurous vapors washed out carried back into the stack, whence they might be drawn off, thus passing out to the outer air the unclouded gases of combustion.

It is apparent from a mere inspection of these three instrumentalities that all operate upon the same principle, that of subjecting a current of gas to a liquid spray. From this operation several ultimate results may follow, dependent upon the characteristics of the gas and of the liquid. When an illuminating gas is passed through the water spray from the retort, it has removed from it the tar and other liquid matters and the solid matters held in suspension. When the gases from the blast furnace are passed through the water spray, they have removed from them the sulphurous vapors, the various metallic particles held in suspension, and the carbon and other solid matter. When the products of combustion of ordinary soft coal fuel are passed out through the stack shown in the third patent and subjected to the spray, they have removed from them the solids and condensable vapors carried in the ordinary gases of combustion.

Under other conditions, other effects might be produced. If it was desired to make sulphur water or carbonated water by subjecting sulphur dioxide or carbon dioxide to the water spray in the closed chamber, the gases would become absorbed in the liquid. If the gases were heated, cold water would cool them. A current of gas subjected to a liquid spray will also take up and carry in suspension the vapor of the particular liquid of which the spray is composed, so that in one case the current of gas may bear away vapor of the hydrocarbon and produce a combustible gas; in another case it may carry away vapor of a disinfecting substance and serve, therefore, in such case as a disinfectant gas; or it may carry mere water vapor into a room and serve to temper the air for breathing purposes, or to moisten the air in a cigar factory.

Figure 4 shows views taken from five patents as follows:

No. 184797, improvement in ventilating rooms, in class 62, refrigeration, subclass 11, refrigerator buildings.

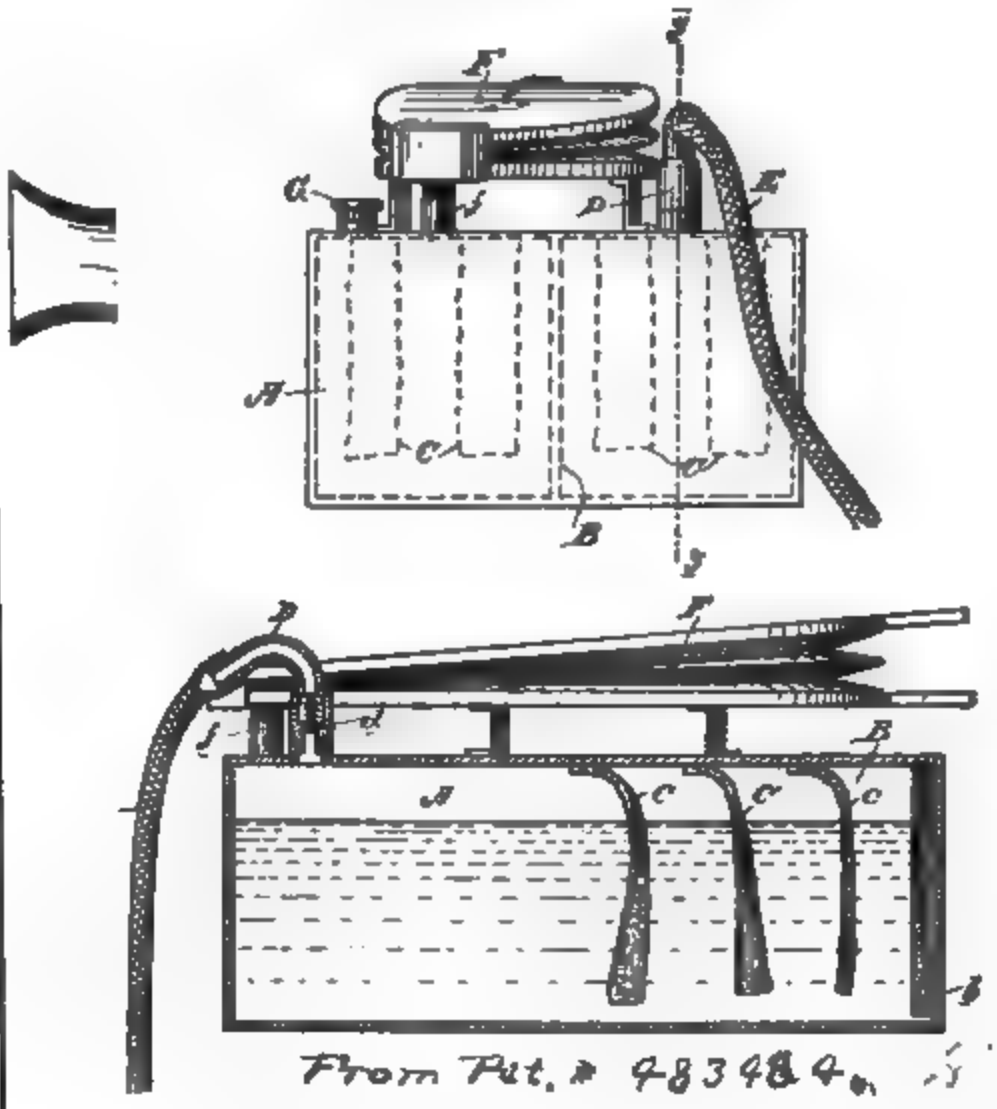
No. 473498, carburetor, in class 48, gas, heating and illuminating, subclass 158, carburetors, capillary, vertical screen.

No. 483484, fumigator, in class 43, fishing and trapping, subclass 5, insect destroyers, fumigators.

No. 760061, disinfecting apparatus, in class 167, medicines, subclass 3, disinfectants.

No. 847840, portable humidifier, in class 98, pneumatics, subclass 44, ventilation, air moistening, cooling, and cleansing, absorbent surface.

The first of these five patents was classified on the basis of refrigeration, one of several ulterior effects which the means shown is adapted to produce, because of its described application for the purpose of cooling and ventilating halls, theaters, churches, rooms, etc. The patent says that the apparatus is based upon the principles of "lowering the temperature by the evaporation of water or other liquid percolating through a porous pipe." The second patent mentioned was classified in gas because a liquid placed in the container was said to be a light hydrocarbon, and the purpose for which the inventor intended it was the carburation of air for combustion purposes. The third patent was placed in fishing and trapping because designed to exterminate



From Pat. # 760061.

vermin, the liquid designed to be vaporized in this case being a volatile poison. The fourth patent was classified as a disinfecting device because described as designed for the purpose of purifying. disinfecting, or scenting air, the liquid to be vaporized in this case having disinfecting or antiseptic properties. The last of the five patents illustrated in this figure was classified in ventilation because for a means designed to be used to circulate air laden with water vapor for the purpose of properly moistening the air of a room.

It is clear enough that each of these several apparatus employs the same physical law and is designed to utilize the law of capillary attraction to draw a liquid into a porous body in order to make it more readily vaporizable when a current of gas is passed over or through the porous body. The physical law operates in exactly the same manner whatever the particular liquid to be vaporized may be, and the character of the machine in the instances cited does not appear to be modified in any way by the fact that in two of them water is to be used, in one of them gasoline, in another liquid poison, and in another a liquid disinfectant. They all have the liquid container, the capillary absorbent, and the means for forcing a current of air or gas over the absorbent, and ejecting the air or gas laden with the vapor from the apparatus.

Figure 5 shows views from two patents granted in different classes:

No. 937676, strainer, in class 210, water purification, subclass 16, filters, strainers.

No. 897123, strainer for pumps, in class 103, pumps, subclass 64, elements, sand traps and strainers.

The first and last claims of patent No. 937676 are as follows:

"1. In straining apparatus an integral casing having inlet and outlet chambers, two straining elements within the casing, means for raising and lowering said elements, and means for closing the lower end of each element when said element is in its raised position and for opening said lower end when the element is in its lowered position; substantially as described * * *.

"11. A multiple strainer, comprising an integral casing having inlet and outlet compartments or chambers, the inlet chamber having access openings in one wall thereof, a plurality of strainer elements movable from the inlet compartment below said openings, covers for closing the said openings, and seating rings which seat the covers and also the strainer elements when the latter are moved into the outlet chamber or compartment; substantially as described."

The specification of the first patent describes the apparatus merely as a strainer without stating its particular place of use. The second one states the invention described to relate "to certain improvements in strainers for the inlet of pumps." These two patents are now in the same class and subclass. The idea of classification upon ulterior use rather than necessary function or proximate utility caused the second mentioned patent to be classified in pumps rather than as a strainer in water purification.

Figure 6 contains views showing three valves taken from three different patents as follows:

No. 966797, valve, and No. 803889, throttle valve, both in class 136; steam-engine valves, subclass 11, throttle.

No. 277713, globe or stop valve, in class 137, water distribution, subclass 69, valves.

Claims 1 and 6 of patent No. 803889, and claims 12 and 15 of patent No. 977797, are identical, the first patent having been in interference with the application for the second. These claims are as follows:

"1. A throttle valve formed with a steam passage and provided with two valve disks mounted on the respective stems and movable independently thereby in opposite directions to close the passage. * * *

"6. In a throttle valve, the combination with a body, a partition having a circular passage, a stem adjustable toward one side of the partition and a valve disk thereon in registration with the passage, of an additional stem independently adjustable

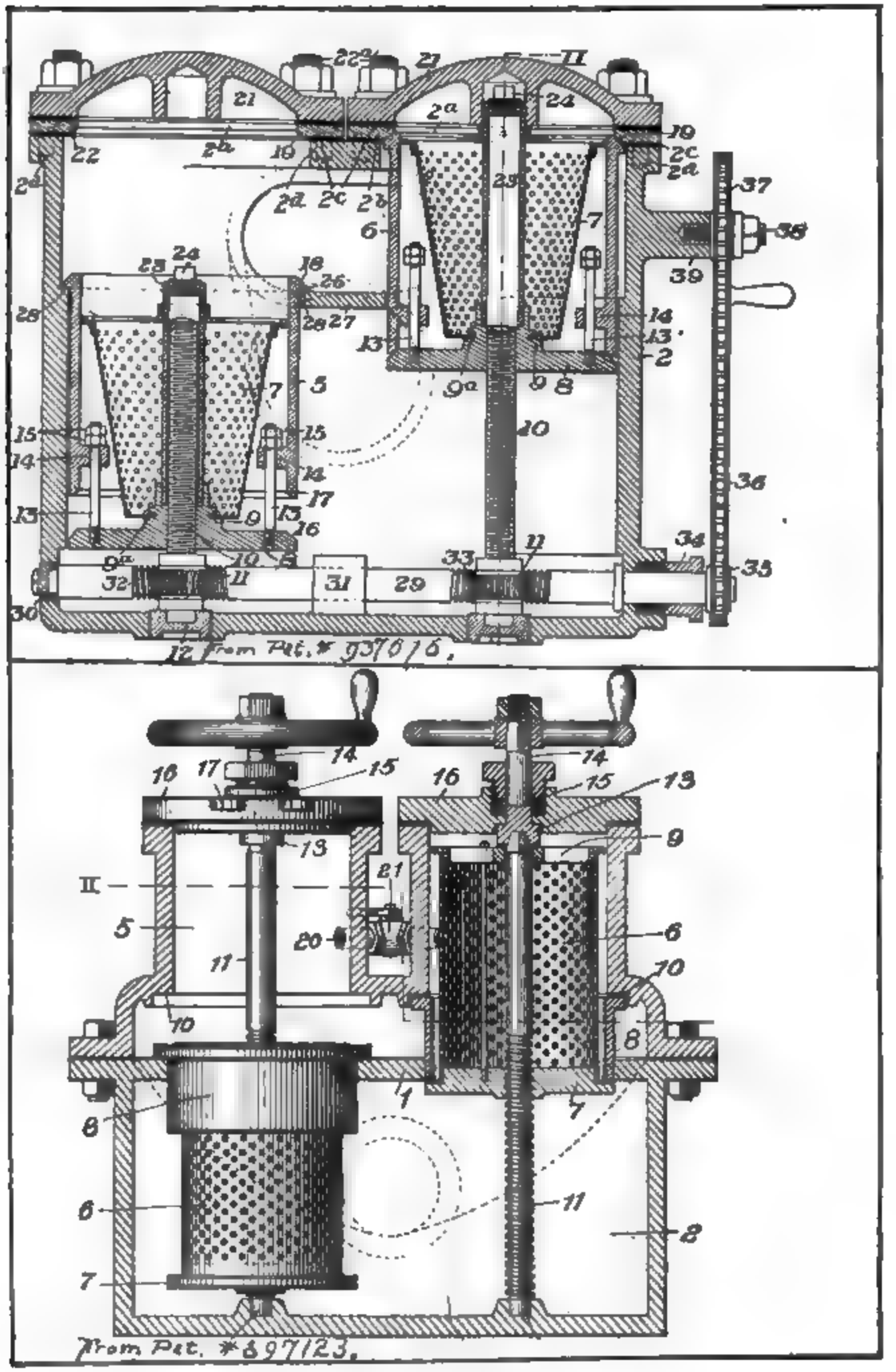


FIGURE 6.

toward the opposite side of the partition, and a valve disk thereon in registration with the passage."

At one time there was a class of valves in the office classification, but to provide for more equable distribution of the work among the examining divisions, or for some

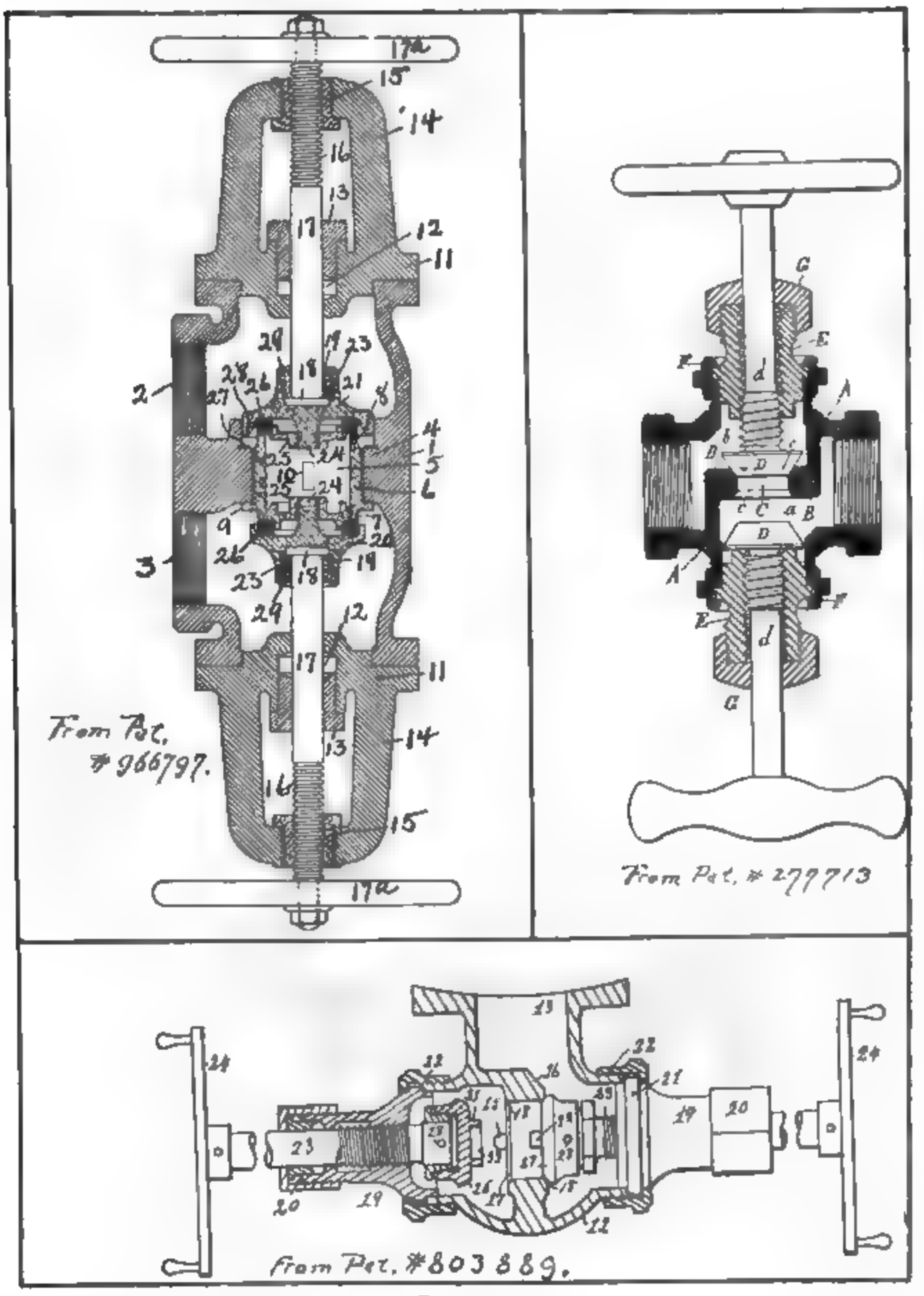
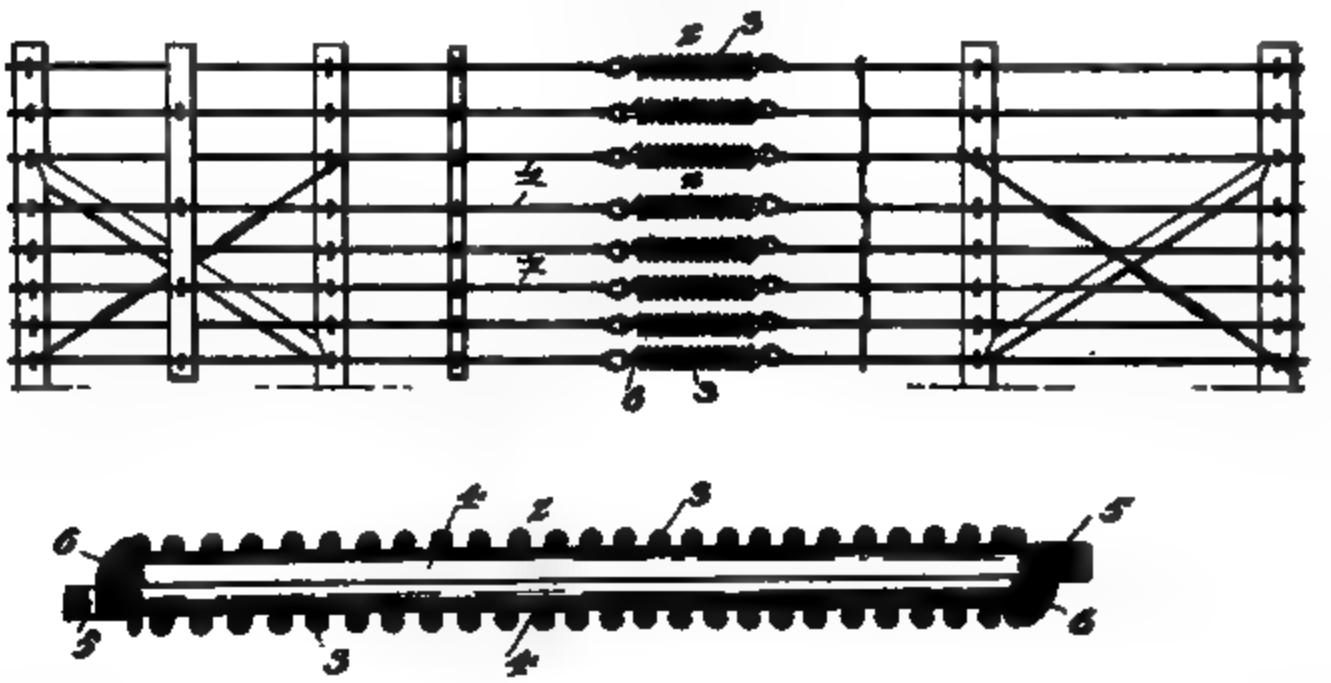


FIGURE 6.

other reason now unknown, this class was split up. One class of steam-engine valves was formed from it and the rest of the patents were placed either in the class of water distribution or distributed in accordance with their application. When a class now in process of formation in the classification division shall have been completed, these three patents will fall within the same class.

Figure 7 shows views taken from the following patents:

No. 529649, compensator for wire fences, originally classified in class 39, fences, subclass 114, fences, wire, stretchers, compensators, spring, compression.



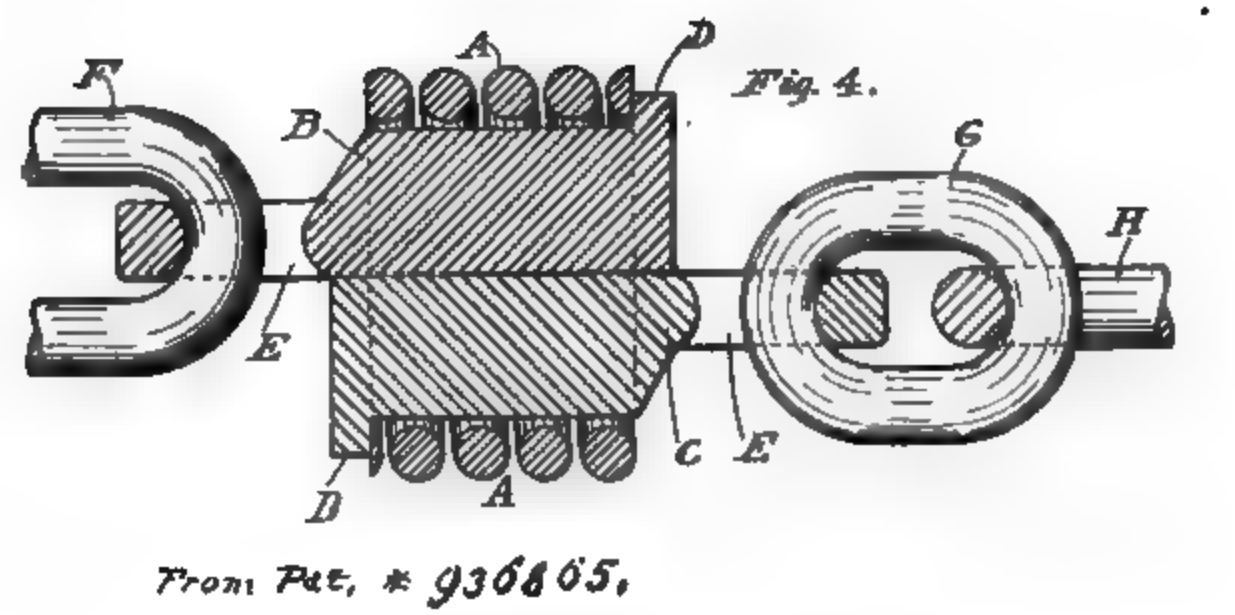


FIGURE 7

No. 936865, spring link, originally classified in class 213, railway draft appliances, subclass 42, draw bars. The claim of the letter patent is as follows.

"A link comprising a tubular coiled spring adapted for endwise compression and two rigid members extending side by side through said spring and having at alternate

ends a flange integral with its member and directed laterally away from the link axis at opposite sides of the latter and bearing against opposite ends of the spring and said members having their ends opposite the end bearing the flange formed for engagement with a transmitting member and small enough transversely to pass through the spring, substantially as described."

These patents were classified obviously in accordance with their application, the first in fences, and the second, because described in the specification as particularly designed to be used between cars, in class 213, the specification stating:

"When strain is abruptly applied to one of two cars between which my improved link is used as a part of a coupling, the transmission of said strain is gradual."

The immediate utility of both devices is, however, to resist elastically the tendency to separate the spring-inclosed members. These two patents are now in the same class and subclass, similar things having been gathered together from a large number of different classes.

Figure 8 shows views from three patents, as follows:

Reissue No. 4882, improvement in hydraulic and pneumatic motors for sewing machines, in class 138, hydraulic motors, subclass 1, oscillating.

No. 14335, hydraulic meter, in class 73, measuring instruments, subclass 28, meters, oscillating.

No. 348097, vibrating cylinder engine, in class 121, steam engines, subclass 42, oscillating cylinder.

Each of these patents discloses and claims a divided valve having an arcuate surface, a cylinder adapted to oscillate on the arcuate surface of the valve, a piston and piston rod adapted to reciprocate in the cylinder, and a diaphragm in the valve on one side of which is an inlet port and on the other side an outlet port. Fluid is admitted to the cylinder when the cylinder has oscillated to the inlet side of the valve, and exhausted when the cylinder has oscillated to the other side of the valve. This is the subject of invention in all of these patents. Because one was said to be adapted to use water as a motive fluid, another to use steam as a motive fluid, and the third to measure the amount of fluid flowing through conduits in any given period, the several similar devices were classified, respectively, as hydraulic motor, steam engine, and fluid meter. A common principle in each of them consists in providing an inlet and outlet valve upon which the cylinder may oscillate, and having the inlet and outlet openings into the valve adapted to be uncovered by the oscillations of the cylinder. The primary purpose in all is the utilization of fluid pressure to produce mechanical motion. When a class which is now in process of formation in the Classification Division shall have been completed, these three patents will be in the same class and subclass.

To show how five simple things similar in structure and dependent upon the same fundamental principle may become differently classified upon the industrial or use basis, five views taken from five different patents are shown in figure 9, as follows:

No. 167769, improvement in soap holders, in class 45, furniture, subclass 28, soap holders.

No. 313015, bluing holder, in class 68, laundry, subclass 11, laundries.

No. 320529, broiler or toaster, in class 53, domestic cooking vessels, subclass 7, pans, frying.

No. 471116, strainer for tea or coffee pots, in class 53, domestic cooking vessels, subclass 3, coffee and tea pots.

No. 788680, popcorn popper, in class 53, domestic cooking vessels, subclass 4, corn poppers.

These reticulated strainers have the primary function of permitting to pass through their meshes matter which is smaller than the openings and preventing the passage of matter which is larger than their openings. As a consequence, gases, liquids, and small solid bodies may pass freely back and forth. Larger solid bodies are prevented

from passing. As a result, if solid matter is placed within the reticulated strainer, air, heated or unheated, liquids of any kind, etc., may pass freely through, while the solid contained within may be subjected to the action of liquid and may be sepa-

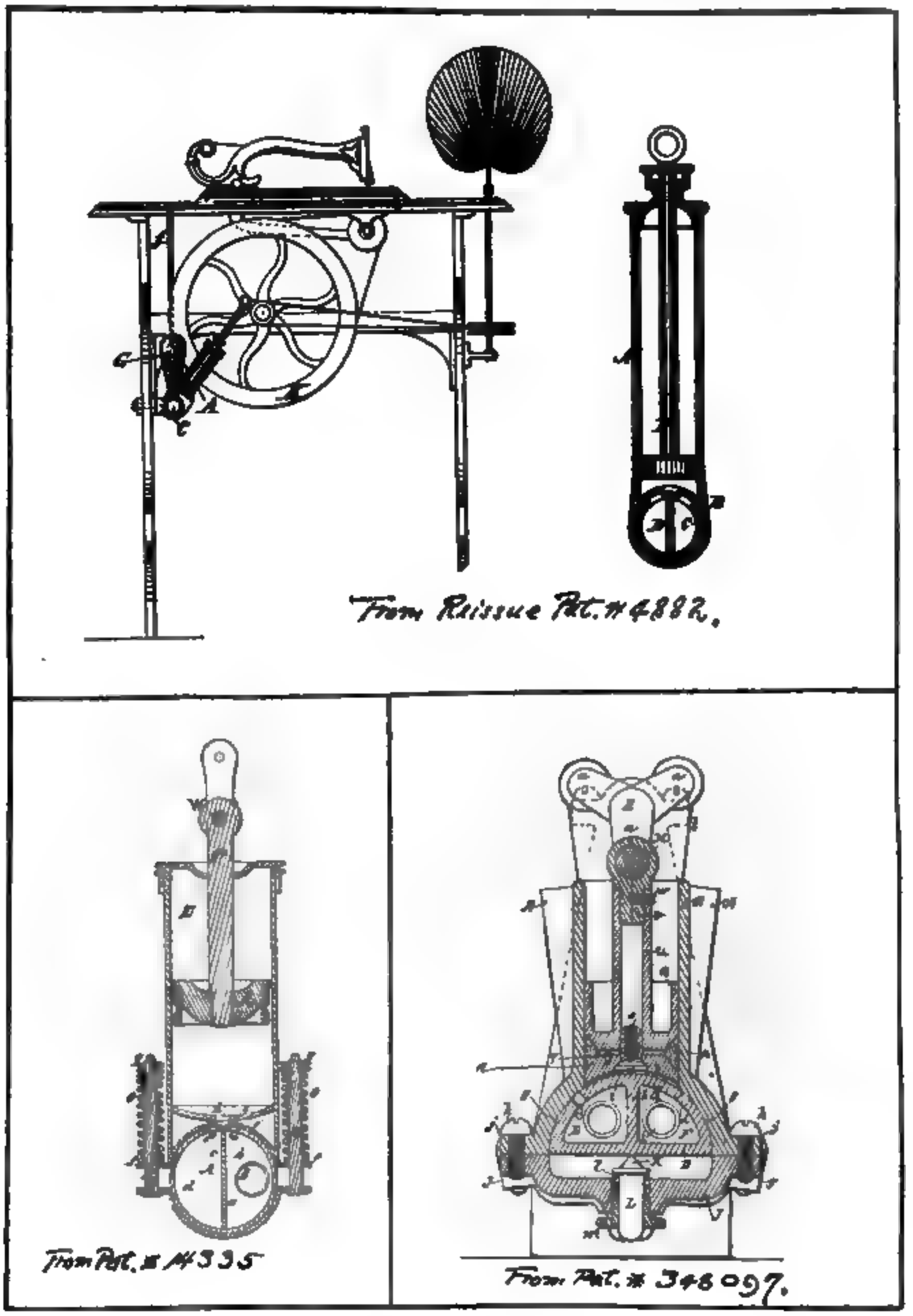


FIGURE 8.

rated as desired from any matter which is smaller than the openings in the mesh. The classification of these devices on the necessary functions would tend to bring things which are essentially similar together, whereas the classification of them upon some accident of use tends to separate them, as illustrated.

Figure 10 shows a view taken from patent No. 605337, traction engine, in class 21, carriages and wagons, subclass 90, motor vehicles, and a view taken from patent No. 737883, vehicle-driving mechanism, in class 105, railway rolling stock, subclass 17, locomotives. Claims 3 and 4 of the latter patent are as follows

"3. In vehicle-driving mechanism the combination of a driving shaft, motors connected thereto to rotate the same, vehicle-driving wheels rotatably mounted on said

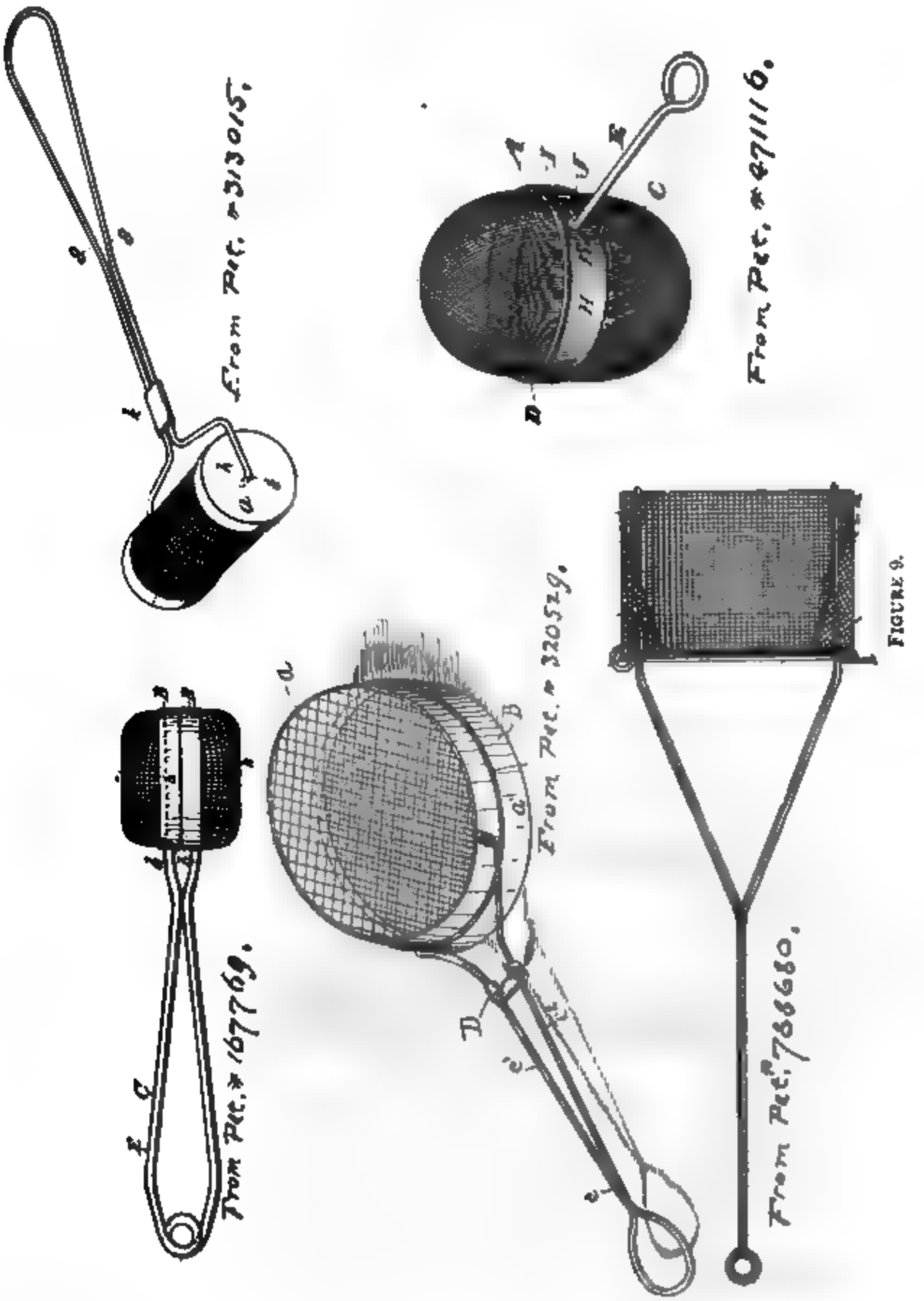


FIGURE 9.

shaft, and a differential-gear connection between the shaft and the wheels, substantially as described.

"4. The combination of two driving wheels fixed on sleeves, a shaft inside said sleeves, gears on the sleeves and cooperating differential gears on the shaft engaging

the same, and a motor driving the shaft and attached thereto outside the driving wheels."

In the former patent the invention is illustrated and described as applied to a road vehicle. In the latter the invention is illustrated and described as applied to a motor vehicle designed to travel on rails. Consequently the inventions in the two

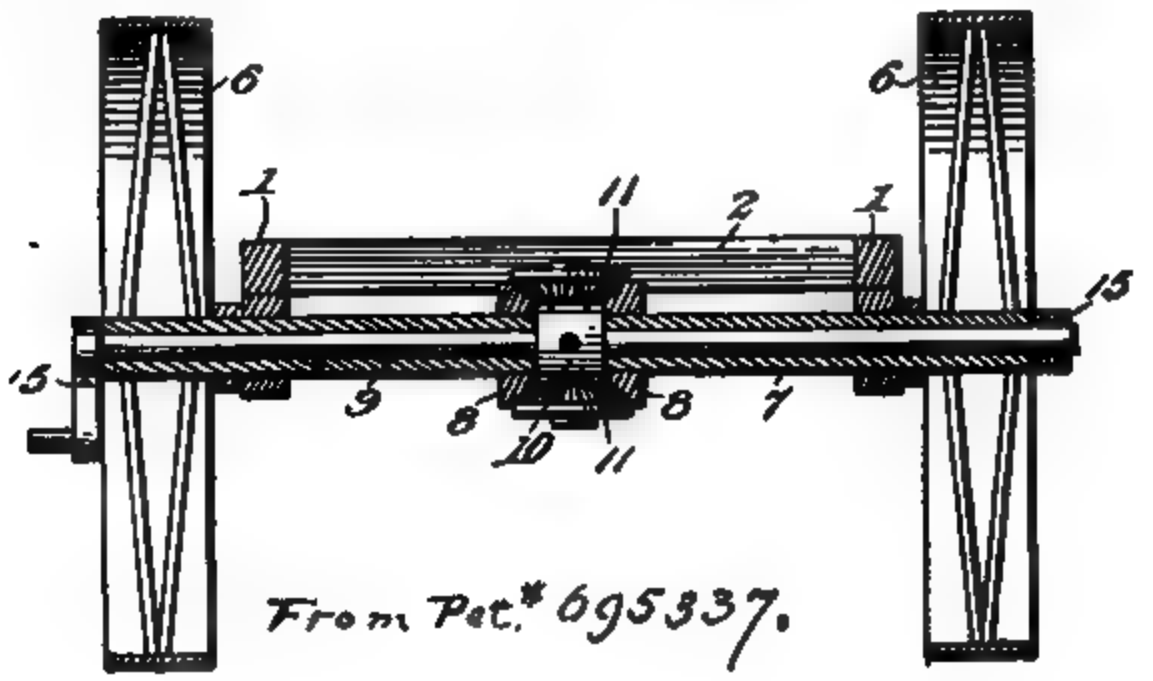


FIGURE 10.

patents were placed in the classes designed to take, respectively, road vehicles and railway rolling stock. According to the rule of subordination hereafter referred to, which would require the placing of material common to two different classes in that one which is established as the superior class, these two constructions should fall into the same class and subclass and will be brought together upon the completion of a class now in process of formation in the Classification Division.

The existing situation concerning classification of instruments designed to apply the heat of combustion may serve as a final general illustration of this subject.

A cursory search shows that there are furnaces for heating material including a source of combustion and a container for material to be heated distributed in some 300 subclasses through the following 20 classes:

17. Butchering, scalding, and singeing.
23. Chemicals, apparatus.
25. Plastic block and earthenware apparatus, 22 subclasses under kilns.
34. Driers, distributed through 48 subclasses.
48. Gas, heating, and illuminating, distributed through various retort subclasses.
49. Glass, subclasses under heating apparatus.
71. Fertilizers, apparatus.
75. Metallurgy, distributed through 40 odd subclasses.
94. Paving, mixers.
99. Preserving, distributed through the class.
107. Bread, pastry, and confection making, 13 subclasses under bakers' ovens.
126. Stoves and furnaces, some 150 subclasses.
127. Sugar and salt, evaporating pans.
148. Annealing and tempering, apparatus, involving 10 or more subclasses.
196. Mineral oils, distributed through the class.
202. Charcoal and coke, distributed through the class.
203. Ammonia, water and wood distillation, distributed throughout the class.
209. Carbonating beverages, gas generators.
222. Hydraulic cement and lime, subclasses under kilns.

Systematic search would probably develop similar heaters in other places.

Patents with titles, as indicated below, relating to furnaces of a special type and including the combination of a horizontal rotary cylinder in which material to be heated is placed, with a combustion means arranged so that the products of combustion will heat the cylinder were found as follows:

Class 25, plastic block and earthenware apparatus, a "kiln for firing china, glass, or other ware."

Class 34, driers, a "roaster for coffee beans, peanuts, etc."

Class 71, fertilizers, a "furnace for treating refuse of cities."

Class 75, metallurgy, "rotary ore roaster."

Class 99, preserving, an "apparatus for preserving and curing wood."

Class 126, stoves and furnaces, a "snow-melting apparatus."

Class 148, annealing and tempering, an "apparatus for annealing nails."

Class 196, mineral oils, "apparatus for distilling coals."

Class 202, charcoal and coke, "retort for heating coal to make coke."

Class 203, ammonia, water, and wood distillation, a "wood-distilling apparatus."

Class 209, carbonating beverages, "apparatus for heating carbonates to make carbonic-acid gas."

Class 222, hydraulic cement and lime, "rotary kiln for making Portland cement."

In all of these there is the same general combination—a rotary container and a combustion chamber or combustion means adapted to apply the heat to the rotary container. It is indisputable that the combination of a rotary drum with a heat generator for heating, for example, limestone, contained in the drum for the ulterior purpose of making a carbonic-acid gas is more nearly like a similar combination for heating iron ores than either is like other instruments for carbonating beverages or other instruments for extracting metals from their ores, and that a classification based upon the application of the heat generated by combustion to a closed rotary chamber would be more likely to bring analogous structures together than a classification based upon any ultimate uses which the heating of any particular named material may serve.

For reasons that are sought to be stated above and illustrated by example, the utility that is adopted as a basis of classification in the Patent Office is the immediate, necessary, proximate, or, as the logician puts it, the "peculiar" utility of an industrial means. Lest the term utility, made use of herein because of its statutory significance, may be too remote from the patentable means to afford that precision which is so essential to classification, there has been substituted for it in classification work the terms {"effect" / "product"} and "function," and every industrial means is sought to be classified in accordance with the effect or product necessarily resulting from its normal use or in accordance with the proximate function performed by it in its normal use. Although function bears somewhat the relation of cause to effect and product, these three terms are not viewed as representing materially different bases of classification, but as designating as nearly as possible a common characteristic by which to classify all means of the "useful arts." In so far as the subject has been grasped at this time it is believed that all inventions may be best classified on this basis, which may be considered as the "art" basis in the precise sense in which the word "art" occurs in section 4886, Revised Statutes.

In none of the processes of classification can progress be made without definition. The language is full of ambiguous words, and the patent law has its full share of them. The terms "effect," "product," and "function" recur in common parlance and in judicial language with different shades of meaning in common with other technical words of the patent law.

By necessary product or product necessarily ensuing is meant a concrete thing or body resulting from the application of energy to matter. A means that would be classified in accordance with its peculiar adaptation to make a particular formed product or type of formed product would be a means that could not achieve any other useful effect, and the term "necessary product" would be limited as a classification basis to means for shaping substances into special products or so treating them as to modify their physical condition (manufacturing). Examples of such are nail-making machines, button-making machines, and shoemaking machines.

By necessary effect or effect necessarily ensuing is meant a change perceptible to the senses resulting from the mutual reaction of energy and matter, but not resulting in a concrete thing. A means that would be classified in accordance with its peculiar adaptation to produce an effect would be a means that could not achieve any other useful effect, and would be applicable as a classification basis only to those means which do not produce perceptible change in the form or substance of matter. Examples of such are telephones, illuminators, motors, motion-picture machines, and so on.

The only difference between the bases necessary product and necessary effect is that in one case the product or effect is tangible and in the other intangible. In one the effect is a product and in the other the product is an effect. Necessary product and necessary effect are the basis of classification of means of special utility—one purpose machines, for example.

By proximate function is meant the action that a means performs when put to its normal use; in other words, the doing. Proximate function would be the basis of classification, for example, of such general-operation machines as agitators, heaters, heat transferors, lathes, rolls of a rolling mill, shearing machines, nail drivers, and so on. They are multipurpose machines. In principle, that is, they are useful for many ultimate effects or products. The agitator may clean castings, coat nails, crush friable material, wash clothes, mix paint, make butter, pack sand or flour, and so on; the heater may fire chinaware, roast coffee, distill coal or wood, roast ores, etc.; the heat transferor may condense steam, heat a room, cool water or beer, and so on; lathes may turn hinge pintles, machine screws, shafting, pulleys, and innumerable different articles having little or no relationship in use; the rolls may crush wheat or rock,

shape boiler iron, calender paper, wring clothes, feed boards, or shape plate glass; the shears may sever sheet iron, paper, leather, or other materials, or form various articles in outline; nail drivers may force fasteners into boxes, baskets, shoes, pamphlets, and the like.

It will now appear that the three terms "product," "effect," and "function," have a common aspect. Effect and product are used as classification bonds when dealing with the classification of special-utility inventions, because the function of such is multiplex and difficult to get hold of. But however varied may be the functions, they, in cooperation, produce generally like effects, and their patentability over other existing means must be tested by the idea of invention growing out of the combination of means (elements or functions) rather than out of any single means or function. Function is used as a classification bond when dealing with the classification of general-utility inventions, because in them the function is single, not multiplex, and it is difficult to seize upon any effect or product because the effect or product is so general in its character. The nail machine, besides its feeding act, upsets the wire to form a head, serrates the sides, cuts off the wire, and forms the point; perhaps it also coats the nail with zinc. The shear, however, does the one act of cutting. The shear may be a part of the nail machine, and it may shear other material then wire, to be used for other purposes than nail making, but the nail machine can never be a part of the shear nor make any other product than nails. One is a special-utility complex-act machine classifiable by the effect or product, the other is a general-utility one-act machine classifiable by the nature of the act.[1]

Function, as used in Patent Office classification, bears the relation of cause to immediate effect. When the purpose of a classification is to serve a scientific end, as to give greater command over that knowledge which it is essential to have in order that the patentability of an alleged invention may be judged of, cause is deemed preferable to effect as a basis of classification. Therefore, in all instances where it is possible to group industrial means in accordance with the causes (the particular law of nature applied to secure the desired effect), the nature of the modus operandi, the functioning, or as it has been put in classification work, the proximate function, is the basis of classification. Sometimes a broad group may be formed on a broad function, as, for example, the application of chemical energy, or application of mechanical energy to matter. Means for applying mechanical energy may be divided into groups based upon giving form to material, imparting relative motion to materials, and so on. Means for giving form to material may be divided again into other groups based on particular functions, for example (1) shaping materials by removing portions (as turning); (2) by adding portions, or accretion (as gluing, soldering, nailing); (3) by distorting (as by bending, plastic shaping). Under the broad headings, however, there will nearly always be means adapted to utilize several laws of nature with the purpose of obtaining special products or effects. It is deemed necessary, as before stated, to classify these by the products or effects produced, for the reason that no one cause or function can be laid hold on for classification purposes. This is believed to be in accordance with the theory of scientific classification stated by Mill[2] and by Jevons.[3] The examples referred to above are thought to furnish persuasive evidence of the error of overlooking the principle here sought to be set forth.

It will be clear that the difficulties in arriving at an appropriate basis of classification are less with processes than with instruments, because a process claim clearly set forth states its own fundamental principle and purpose, whereas instruments are frequently of more general use than indicated in the specification, the description and stated uses of the invention in which may mislead the classifier.

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[1] Special-utility machines may be classified on the basis of product or effect because there is but one. General-utility machines may not, because there may be several products or effects.

[2] System of Logic.

[3] Principles of Science.

In adopting proximate function as the basis of classification of the broadest groups and the general-purpose inventions, and necessary effect or product as the basis of classification of the special-purpose inventions, the following remarks of Mill are deemed pertinent:

"There is no property of objects which may not be taken, if we please, as the foundation of a classification or mental grouping of those objects; and in our first attempts we are likely to select for that purpose properties which are simple, easily conceived, and perceptible on a first view, without any previous process of thought. * * * But these classifications which are at first recommended by the facility they afford of ascertaining to what class any individual belongs, are seldom much adapted to the ends of that classification which is the subject of our present remarks"[1] (operations subsidiary to induction).

It is doubtless much easier to classify an invention in accordance with any particular ulterior use for which an inventor may have designed it and set forth at length in the specification. Such a classification requires no brain cudgeling. It is beautifully easy to place patent No. 484955 for a liquid cooler (illustration, fig. 2) in the class of refrigeration because the specification tells at length how the patented instrument is adapted to reduce the temperature of fluids, and mentions no other utility; and equally easy to place patent No. 243686, for evaporating apparatus, in the class which deals with evaporation, because the specification clearly states that the operation of the apparatus causes evaporation. But it is not so easy to find these two patents at a subsequent period when another inventor seeks a patent for the invention claimed in patent No. 874343, for a pasteurizer for purifying liquids, after this easy process of classifying has been carried out. The proximate function or necessary effect or product (particularly the first) is not always easy to get back to, but each is in the nature of a peculiar property whose selection as a classification bond affords more accurate results and is more certain to be fixed upon by different minds as the common property appertaining to a large number of means than is any ulterior utility or accident of application, of which there may be many, any one of which may be hit upon in the effort to classify. This practice of seeking the deepest or most fundamental resemblances for classification purposes may be the subject of derision by some, but if there be such derisory persons it is possible they have given but superficial thought to the subject of classification as related to patentability, to aid the investigation of which is the whole purpose of the Patent Office classification. The examples given above to show how instruments having a fundamental similarity and operating under the same natural laws become widely separated when classified on the basis of some stated use more or less remote from their proximate functions, sufficiently indicate, it is thought, the correctness of classifying upon the fundamental rather than upon the superficial resemblances.

THE WORD ART AS APPLIED TO CLASSIFICATION.

The word "art" as used in common language with reference to a classification of useful arts is no less ambiguous than when used in the language of the patent law. In section 4886 of the Revised Statutes "art" means the same as industrial process.[2] In the minds of many, as applied to Patent Office classification, it means the inventions included in prior existing classes but not those in new classes. After awhile these persons will admit the inventions of the new classes to the embrace of the term. To some persons "art" means the inventions directed to the production of special articles or operations on particular materials, while to others it means a certain trade or industry or merchantable class of things. According to this last meaning, classification would be on lines such as carpentry, defined as all things made by and operations and tools

[1] System of Logic, Book IV, Ch. VII.

[2] Cochrane *v.* Deener, 4 Otto, 781.

used by carpenters; hardware, all things commonly sold in a hardware store; stationery, all things sold by a stationer. And this last is, in fact, with modifications, the basis of most patent classifications including, as indicated above, the one in the United States Patent Office now undergoing change.

The word art doubtless may be used in Patent Office classification to good advantage, assuming that with the processes constituting its statutory meaning be embraced the instruments peculiarly adapted to carry out those processes, and, with this modification, used in the statutory sense. In this sense, the word art would merely take the place of the terms necessary product or effect and proximate function in the present plan of classifying.

In Patent Office classification the word art has commonly been considered as a designation of those particular classes of invention wherein the bond is necessary effect or product (commonly achieved as the resultant of various and combined functions), in distinction from those classes which are based upon the application of one law of nature in a particular manner, in other words, on functions or the doing of an action.

Art in classification as a designation of all industrial processes and instruments peculiar to them, and art as a designation of groups of complex and various processes designed to produce special effects, are sufficiently definite and useful senses of the word. Used otherwise in connection with classification the word is without definite meaning. It has been avoided in the statement of the bases of classification because it has been feared its use might lead to some confusion. But it might well be adopted in the first sense mentioned in this paragraph in place of the other terms used.

THE WORD STRUCTURE AS APPLIED TO CLASSIFICATION.

It would not be possible to adopt structure as a uniform basis of classification because the more fundamental inventions are not structures but processes. If it be the law (as it is assumed it is) that an existing structure should prevent the grant of a patent for that same structure, even when used in a different industry to secure a different ulterior result, it would be entirely logical to classify processes according to their laws, and instruments according to their structures. Instruments having points might, for example, be assembled in one class comprising pins, needles, nails, ice picks, bodkins, stilettos, fids, marlin spikes, brad awls, and ox goads, and the classification would not perhaps be unsuitable. When, however, one undertakes to classify screw machines, registers, looms, and telephones according to structure, it is found to be difficult to select the combinations of machine elements in such relations as would be adapted for bases of groupings. There would be difficulty in adopting a standard. Furthermore, superficial resemblances between different machines having widely different functions and producing widely different necessary effects are sometimes quite striking, the similarity of the one to the other being entirely fortuitous and not detracting from the merits of the invention. Under such circumstances, attempts to classify on structure would be disastrous. Because of the seeming impossibility of setting up standards of comparison by structure, the adoption of structure as a basis of classification of instruments, it is believed, would be difficult and would prove unsatisfactory. The fundamental invention is always the process. And in selecting as the basis of classification the characteristics which are at the starting point of inventions directed to the fulfillment of a proximate want, it is believed the characteristics have been chosen which bring together in groups those inventions having the largest number of properties in common. Instruments operating in accordance with the same law of nature will pretty generally be analogous in structure, and so will those producing the same generic effect, although to a lesser degree.

In the refinements of subdivision, however, it is desirable and usually necessary to subdivide by structure; for example, in class 79, button making (which is a class

based upon necessary product, or an "art" class),[1] there is a subclass 15, pearl and composition, blank sawing (which is a "functional" subclass), and indented under that a subclass 16, tubular saw, which differentiates by the structure or form of the saw. Still, it is to be noted, the function enters into the title. The things included in that subclass are not mere "tubular structures," but tubular instruments specially adapted to perform the function of sawing. There is, of course, no prohibition on carrying the principle into broader subdivisions or even into classes. This would only be done when the function adapted to be performed is very general.

LAX OR UNSETTLED NOTIONS RESPECTING INVENTION AND THEIR BEARING ON CLASSIFICATION.

Thus far in endeavoring to state the basis of the Patent Office classification of the useful arts, and explain the reasons for adopting that basis, the bearing of utility on correct classification has been discussed. Notions of what constitutes invention also have a bearing on classification. In assuming that all instruments functioning alike—operating under the same general mechanical laws—and exhibiting similar constructions and modes of operation ought to be assembled in order to best facilitate a search for novelty, it has been assumed that an old instrument (for example, a churn), designed for and used in one industry would prevent the grant of or invalidate a patent for an instrument (for example, a washing machine) designed for and used in another industry, if the structures and modes of operation were the same. If this assumption is erroneous—that is to say, if an old thing already in possession of the public or some patentee may be patented or repatented to another, because put to use in an industry different from that in which it had been before used—then the basis of classification (proximate function and necessary effect) that has been adopted is less valuable than one based on ultimate use or ulterior effect (particular trade or industry). It seems indisputable that an agitating vessel designed to so agitate its contents as to bring water into thorough contact with a piece of clothing for the sake of cleansing the latter need not, at least, be classed with a like agitator designed to break up fat globules in milk, if one is not a reference for the other. If the law is that one is patentable over the other, the "industrial" basis of classification would be better. The assumption that one is not patentable over the other is adopted because thought to be supported by reason and the weight of judicial opinion. Examples of patents, differently classified on the industrial or remote use basis in the old classification, but held invalid by United States courts, have been referred to. The rule of law on double use of an instrument is substantially that the patentee is entitled to his property right in the instrument patent, even though another put the instrument to some other use which the patentee had no conception it was adapted to; and with regard to mere use or function of a machine (this is a rule requiring nice discrimination) that such use or function can not be the subject of a patent. Further, in the language of the Court of Appeals, Sixth Circuit—

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[1] CLASS 79.—BUTTON MAKING.

Subclasses:

17. Blank feeders.
3. Metallic—
4. Covered—
5. Cloth.
1. Miscellaneous.

Pearl and composition—

15. Blank sawing—
16. Tubular saw.

Drilling—

Multiple spindle—

11. Axially opposite.
12. Multiple chuck.
13. Single chuck.

CLASS 79.—BUTTON MAKING—Continued.

Subclasses—Continued.

Drilling—Continued.

Single spindle—

14. Single chuck.

7. Surfacing—
9. Multiple chuck.
8. Tool sharpening.
10. Trimming.
6. Surfacing and drilling.
2. Shank buttons.
18. Work supports.

"It would seem to follow as a corollary to these two propositions that where it requires substantially no change in the old device to adapt it to the new use, such adaptation can not be the subject of a patent, no matter how remote and unthought of the new use may be."[1]

There are cases where use of an old means for a new ulterior purpose has been held to confer patentability. A means designed for securing a letter to a sign has been held not to prevent a patent for the same means for securing a letter to a finger ring.[2] The phrase "patentable novelty" has sometimes been made use of because if the conclusion of such cases is the law mere want of novelty can not be relied on to invalidate a patent, and the word novelty must be qualified. However, it has been assumed, for purposes of classification, that mere want of novelty is a bar to a patent. Having been apprised that similar structures are sought to be classified together on the basis of necessary function, the searcher will be able to detect that function and direct his attention to the proper class. The mere classification in one division or another can place no prohibition on the grant, and if the Commissioner of Patents or a court deems a new use of an old thing to confer patentability on the thing the classification of it on the basis of proximate function instead of remote use should not prejudice the judgment. The ruling of the classifier is not a ruling on patentability.

Jefferson would hardly have classified on ulterior use nor admitted the patentability of an old thing because applied to a new use.

"As a member of the patent board for several years while the law authorized a board to grant or refuse patents, I saw with what slow progress a system of general rules could be matured. Some, however, were established by that board. One of these was that a machine of which we were possessed might be applied by every man to any use of which it was susceptible and that the right might not be taken from him and given to a monopolist because he first had perhaps occasion to apply it."[3]

In the work of classification the truth of Jefferson's rule is assumed, and the remark regarding the slow progress by which in treating a subject anew, with no precedents, a system of general rules may be matured is appreciated.

Other aspects of double use trouble the classifier. An applicant asks a patent for an alloy including a rare metal and says he designs to use it in pointing gold pens, in making wire for suspending electrical measuring instruments, and as filaments for electric lamps. Another asks a patent for the same or analogous alloy for a lamp filament. Another asks a patent for a filament made of a known alloy. Should all these be classified together under alloys? All alloys are designed for some ulterior use; most of them are adapted for numerous uses. In the more common types of alloys of the baser metals no question would ever arise but that the proper classification is with alloys. But when recent inventions have been made that instigate and stimulate efforts to discover appropriate alloys for use in connection with these inventions there is a tendency to hold that an alloy, for example, for a lamp filament, may be patentable, even if old. Undoubtedly, when the filament is brought into combination with other elements that make the lamp, thus rendering the filament capable of emitting light, the new combination may be patentable. What should be done with the alloy merely? Or let it be supposed that an alloy of tungsten makes a grand metal-cutting tool, and a lively watchspring, and a wear-resisting bearing, and a shell-breaking armor plate. Where should the several applications or patents for this alloy, claimed as an alloy only, be classified; or where shall they be classified in case they claim a tool made of an alloy of tungsten and iron, a spring, a bearing, an armor plate made of this alloy?

The diverse classification of the many patents for means performing common proximate functions that have been compared hitherto has been assumed to be erroneous.

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[1] Frederick R. Stearns & Co. *v.* Russell, 84 O. G., 1434, Taft, J.

[2] In re Weiss, C. D., 1903, p. 546.

[3] Writings of Jefferson, published by Jefferson Society, vol. 13, p. 335.

Whether the apparent duplication of patents was caused by this diverse classification can not be alleged. Examiners frequently show marked penetration in ferreting out analogous things in remote classes in the short period of time they are able to devote to a search. And it may be that some or all of those patents were allowed, not because examiners did not have the prior patents for analogous structures before them, but because their notions of the application of the doctrine of double use prompted their judgment to grant the patents, notwithstanding the proved existence of the prior ones. If such are the facts and the examiners' judgments were in error, it can not be expected that a classification that brings these things together will entirely correct that error. For such a condition there is no help but such proper training of the examining force as will secure uniformity of opinion on the fundamental principles of patentability and that can only be had in a large body of men by such organization as will enable the head of the office to knit more closely to himself the numerous units, to set up a centripetal force to counteract the centrifugal one that is so apt to develop in a large organization under the immediate (without intermediate lieutenants) direction of one person. It is not to be expected that all minds can be brought to agree on all questions of invention. On such questions the Supreme Court has divided five to four. It should, however, be expected that all minds shall be in accord on certain fundamentals of law and on the modes of procedure.

LAX OR UNSETTLED NOTIONS REGARDING CLAIMS AND THEIR BEARING ON CLASSIFICATION.

The claims in a patent are the measure of every invention patented. A classification of patented inventions purely, therefore, would be based on them. But the classification of the Patent Office is a classification of the useful arts and must provide for inventions disclosed, whether claimed or not. As a matter of fact, in classifying patents the rule is to place the patents by the claimed inventions (for a reason sought to be given later under the head of diagnosis) and place the disclosure not claimed by cross reference.

If the patentee has claimed some other invention than that which was invented by him, or if the Patent Office has allowed claims for other inventions than that invented by him, and the inventions were classified strictly by the claims, it is apparent that some inventions would be disassociated from others of a like kind. After the law of 1836 went into effect, claims became essential to a patent and were held by the courts to be the description or definition of the invention patented.

In White *v.* Dunbar (119 U. S., 52) it was stated:

"The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms."

In Keystone Bridge Co. *v.* Phoenix Iron Co. (95 U. S., 278) it was stated as follows:

"Since the act of 1836 the patent laws require that an applicant for a patent shall not only, by a specification in writing, fully explain his invention, but that he 'shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery.' This provision was inserted in the law for the purpose of relieving the courts from the duty of ascertaining the exact invention of a patentee by inference and conjecture, derived from a laborious examination of previous inventions, and a comparison thereof with that claimed by him. This duty is now cast upon the Patent Office. There his claim is, or is supposed to be, examined, scrutinized, limited, and made to conform to what he is entitled to. If the office refuses to allow him all that he asks, he has an appeal. But the courts have no right to enlarge a patent beyond the scope of the claims as allowed by the Patent Office."

In the case of the Cornplanter Patent (23 Wall, 181) it was said:

"Where a patentee, after describing a machine, claims as his invention a certain combination of elements, or a certain device, or part of the machine, this is an implied

declaration, as conclusive, so far as that patent is concerned, as if it were expressed, that the specific combination or thing claimed is the only part which the patentee regards as new. True, he or some other person may have a distinct patent for the portions not covered by this; but that will speak for itself. So far as the patent in question is concerned, the remaining parts are old, or common and public."

Many times it has happened that so-called aggregation claims have been allowed in patents. By an aggregation is meant, for example, an alleged combination of two things having no mechanical connection or relation with each other, as the combination of a plow and a sewing machine, or of an inkwell and a penrack, or, getting to still closer associations, a rolling mill and a steam hammer. Now, there may be a relationship in use between the things set forth in this aggregation claim, but as there is no community of function, and it is difficult to get at any definite effect as a result of this alleged combination in many cases, it evidently is difficult to classify such things unless a limbo class is provided into which they may be cast. Sometimes these so-called aggregation claims are made by pure inadvertence, the actual invention being in one of the elements. As there is disclosure of more than that element, and as the claims are the legal test of the invention, it is apparent that the rules of classification would base the classification of that particular invention upon the entirety shown and claimed, where this may be done conveniently. Of course, the new element which is disclosed and included as an element of the claim can be taken care of by cross reference. Sometimes these aggregations are so obvious that it has been the rule of classification to take judicial notice of this fact, and classify in accordance with the actual invention which was, in fact, an element of the combination claimed.

Sometimes also there are claims for cooperative elements in combination when the invention is purely in one of the elements, as, for example, in case an application should claim a screw machine and bring into the combination the headstock, spindle, bearings, change gears, tool turret, driving connections, and clutch, specifying the particular construction of the clutch. Now, the invention may be wholly in the clutch, and the applicant, by reason of his unskillfulness in patent law, has claimed the clutch in the use to which he designed to apply it. The combination in which he uses it may be old, and the entire novelty in some specific feature of the clutch. In general, in such a case, the claim should be for the clutch and the illustration confined to the clutch. But that claim for the screw machine having been made and the illustration to support it having been presented, it would be necessary under the rule to classify this patent with screw machines and cross reference it to the class of clutches.

In other cases necessary elements may be omitted from an invention and the claims limited to one of the elements of the really patentable combination. Looking now at the thing claimed, it is recognized as old, and the mind of the examiner who allowed the patent must have read into that claim the use and associations of the particular thing claimed. Under such circumstances, the classifier must bring himself to look at the device in the light in which the examiner who allowed it viewed it, and provide for it in the class of combinations similar to those which the applicant ought to have claimed as well as in the class of elements similar to those which he did claim.

Sometimes patents are found with one claim including several inventions having, of course, a close mechanical relationship, but no unity of conception. For example, a patent may illustrate a building block of a defined hollow form and claim such form, also the composition of matter of which it is made, the composition with which it is glazed, and sometimes even go so far as to set forth in the same claim that it has been baked at a certain temperature and the enamel applied in a certain manner. Now, all of these several inventions are found in separate classes. It is clear enough that on the face of the claim the invention is a building block and would be classified with building blocks, but there is also included a plastic composition and a liquid coating composition, a method of hardening ceramics, and a method of enameling. The classifier has to make cross references for each one of those ideas which he finds set

forth there or else investigate the thing anew and determine whether or not the claim was allowed in view of one only of those inventions.

Patents also are found with claims broadly for means for accomplishing one function in combination with means for accomplishing another function. This is clearly all means for carrying out the method of doing this, and then that. The classifier may not know whether the method was old and the claim was allowed broadly for any means for carrying it out, or whether the applicant, simply by his lack of knowledge of patent law, had claimed a method in the form of an instrument.

Sometimes also claims for very simple and old instruments have been allowed because the examiner had in mind when allowing them the fact that these instruments were used for carrying out a new method. To illustrate, it may be assumed that the applicant had a generator for acetylene gas, and provided with an inlet for the carbide, an inlet for the water, and an outlet for the gas, all properly valved. This, it may be assumed, is claimed merely as a generator comprising a container, and having the several openings, limited by statements of the uses to which it was intended to put these openings when using the device for generating gas. After all, it is a mere tank with three openings, and as an instrument is anticipated by other tanks with three openings. But in considering the invention the mind has been influenced by the fact that a new process of manipulating the water or of drawing off the gas has been disclosed, and the fact, that the invention claimed is a mere instrument, obscured.

All these variations and vagaries make trouble in classifying. It may be said that the real invention will be hit upon anyway by adequate cross referencing and this is probably true, but there is a limit to cross referencing. The cross referencing that would be necessary to place in classes appropriate for them the various elements which may be shown in all of the patents would fill the Patent Office. Many times, therefore, exceptions have to be made to the strict rule in particular cases.

A claim is presumed to lead directly to its goal. If it does not uncertainty ensues. It is not always easy to follow the right road when innumerable blind lanes diverge from it at frequent intervals. It is difficult for the hearer to keep hold of the thread of loose narrations replete with digressions and wanderings into the territory of suggested collateral events. When claims scatter, wander into irrelevant incidentals, leave hiatuses here and there, and accumulate absolute excrescences, the problems of classifications are made hard. Fortunately no classification of the natural sciences has such problems to deal with. Monsters of the animal kingdom occur only in fairy tales. The zoologist never has to classify combinations of birds, fishes, reptiles, and mammals. In the field of invention, legitimate combinations of any known means may occur, and any combination or permutation whatever, normal or abnormal, among the infinite number of possible ones may be presented to the classifier.

Finally, it is probable that no classification can be produced, into some one of the various divisions of which every possible invention will find an unquestioned place. There will never cease to be cases of doubtful classification and classification disputes. If one were to consider the colors of the spectrum as classes of colors, it is not to be expected that every person could subdivide articles colored all possible shades and place each article, diagnosed by color, with absolute certainty in the class blue, red, green, etc. It would be difficult even to draw the exact division line between the blue and the green, and the green and the yellow, in the spectrum. Even a classification based on correct principles will sometimes prove a difficult instrument with which to assemble inventions in their most appropriate relations.

SUBDIVISION OF CLASSES.

Thus far the endeavor has been made to explain the principles designed to be followed in Patent Office classification whereby similar inventions may be assembled into main groupings, designated classes in the present classification, of which there

are now upwards of 240. The next subject to be considered is the arrangement of the subclasses within the classes; in other words, the subject of logical division. Little comment need be addressed to this subject, as the principles of logical division are quite well understood and available models (said to be the best scientific classifications yet known) are to be found in the classifications of living organisms. It must be premised, however, that a classification of useful arts deals not only with complete organizations adapted to the final ends of useful arts, but also with all parts and details of such organizations down to the minutest element in its nicest refinement. Zoological and botanical classifications deal with the complete organisms, while the classification of the details of those organisms are the bases of other sciences. It will be apparent, therefore, that the subject of classification of useful arts is of much greater numerical magnitude at least than that of any of the biological sciences, not only by the quantity of wholes to be divided and assembled but also by the necessity of classifying the parts and elements peculiar to certain classes of inventions in the same classes with the complete organizations, as well as those that are general in general classes. The difference between classifying things differentiated by laws of nature and classifying the inventive products of the human mind has been heretofore suggested. Perhaps it will be perceived, also, how difficult it is to follow the rules of logical division in a classification of inventions. The products of sane and orderly thought governed by the recognized laws of thought are probably susceptible of logical division; but when, as in many instances, as heretofore indicated, the alleged inventions have not been set forth in accordance with the laws of thought that guided the inventor to his goal, the path of the classifier is considerably befogged.

Having defined the contents of the class (stated the nature of the peculiar effect or function—or the "art"—which has been selected as the group bond or characteristic peculiar to the class), the material included in it is or should be arranged in the order of the complexity of the means possessing the requisite characteristics; the special utility instruments standing first in order of complexity, the general utility complete instruments next, and after them parts and accessories general or common to all that has preceded. Parts and accessories peculiar to any main subdivision are placed last under that subdivision. If there be subclasses for processes general to the class they are placed last of all. Those specific to a major subclass are placed last under that subclass. Should there be products included, they would come before processes, if the processes were of the general or "machine" sort. Processes of the special or "article" sort are generally so tied and confused with the products that they could well be an exception to this rule. Classes made up mainly of inventions of the latter type, such as chemicals and compositions produced in part by chemical action, must, apparently, include both processes and products. The interpretations of the courts seem to necessitate it.

The schedule of class 212, traversing hoists, is appended for illustrative purposes, arranged in the numerical order of subordination.

CLASS 212.—*Traversing hoists.*

1. MISCELLANEOUS.
2. WEIGHING.
3. FLOATING.
4. DOOR LIFTERS.
5. TRACK STRADDLING—
6. Self-propelled.
7. SKIDDING.
8. VERTICALLY SWINGING HOIST FRAME—
9. Load handling.
10. TRAVELING CRANES—
11. Load handling.
12. Horizontally swinging bridge.
13. Gantry—
14. Load handling.
15. Overhanging end—
16. Flexible bridge.
17. Jib.
18. Overhead—
19. Flexible bridge.

TRAVELING CRANES—Continued.
Overhead—Continued.
20. Bridge-mounted hoist motor.
21. Electric—
22. Multiple track.
23. Stationary motor—
24. Cable driven—
25. Fluid.
26. Traveling motor, fluid hoist.
27. Traveling motor, cable shift.
28. ROTARY CRANES—
29. Combined crane and supporting rack.
30. Fluid—
31. Swinging hoist motor, cable hoist.
32. Swinging hoist motor, trolley mounted.
33. Vertically movable jib—
34. Mast jack.
35. Vertically swinging jib.
36. Line shaft driven.
37. Vehicle wheel power.
38. Self-propelled.
39. Automatic stop.
40. Load suspension.
41. Load handling—
42. Grab.
43. Portable—
44. Grab.
45. Sling.
46. Portable horizontally pivoted mast.
47. Opposing jibs.
48. Counterbalanced—
49. Portable.
50. Automatic sluing—
51. Portable.
52. Variable radius—
53. Portable.
54. Variable radius—
55. Extensible jib.
56. Trolley.
57. Vertically movable jib.
58. Vertically swinging jib—
59. Portable.
60. Lever, first class.
61. Fixed radius—
62. Lever, first class.
63. Trolley.
64. Vertically movable jib.
65. Portable.
66. Sluing mechanism—
67. Bull wheel.
68. Gear sector.

ROTARY CRANES—Continued.
69. Sluing platform.
70. Pivots, steps, and mast caps.
71. LINEAR—
72. Cable, ship-coaling type.
73. Shiftable track—
74. Longitudinally movable.
75. Tilting.
76. Cable—
77. Load handling—
78. Draft rope—
79. Dumping—
80. Double tackle.
81. Grab.
82. Sling.
83. Load suspension—
84. Grab.
85. Sling.
86. Automatic stop.
87. Draft rope, hoist-rope traverse—
88. Divided hoist rope.
89. Hook lowering.
90. Running track.
91. Cable return.
92. Gravity return—
93. Cable.
94. Draft rope, independent traverse—
95. Anchored hoist rope.
96. Hook lowering.
97. Load suspension—
98. Hoist, carry and lower.
99. Running rope.
100. Sheave catch—
101. Pivoted cable extension.
102. Sheave frame catch—
103. Sliding.
104. Pivoted—
105. Double.
106. Rope catch—
107. Sliding.
108. Pivoted—
109. Double.
110. Rope grip—
111. Variable elevation—
112. Carriage release.
113. Side draft.
114. Coacting sheave.
115. Ratchet sheave.
116. Trips, stops, and knockers.
117. Rope carriers—
118. Cable-stop operated.
119. Trolley supported.
120. Carrier-sheave operated.
121. Permanently spaced.

LINEAR—Continued.
Cable—Continued.
122. Carriage holders, track clamp.
123. Pulley changers.
124. Self-propelled—
125. Load handling—
126. Electric—
127. Grab.
128. Guide bar—
129. Grab.
130. Ladle.
131. Electric—
132. Automatic stop.
133. Hanging-cable traverse.

LINEAR—Continued.
134. Nonmotor traverse—
135. Load handling—
136. Discharging—
137. Automatic.
138. Fluid hoist.
139. Lever hoist.
140. Surface—
141. Self-propelled.
142. Drum—
143. Intermittent grip.
144. JIBS AND MASTS.
145. AUXILIARY SUPPORTS.

The definition of class 212 is as follows:

"By traversing hoists are meant instruments specially adapted to lift a load by an elevating means applied through a support above the load and to shift it laterally. This class includes such instruments, together with parts and accessories peculiar to them, except those of such special character as to be deemed more appropriately classifiable elsewhere.

"Jacks, inclined planes or railways, elevators, or screws directly applied to the load, although adapted to both lift and laterally shift the load, are classified elsewhere."

It will be observed that this class is based upon the function of lifting and traversing (certain exceptions being noted) and takes means peculiar and limited to the performance of this function. The first major subclass (main subdivision) is 1, Miscellaneous; the next, 2, includes a special type designed to weigh the load as it transfers it; then 3, another special (marine) type; then 4, a special type limited in use to lifting and traversing a certain specific structure; then 5 and 6, a type limited to use in a special place, viz, on railways; then 7, 8, 10, 28, and 71, general types adapted for lifting and traversing any load in any place; then two subclasses, 144 and 145, devoted to jibs and masts and auxiliary supports, which potentially are parts and accessories adapted in principle to more than one or to all of the types preceding. The subclasses of parts and accessories peculiar to any type are placed lowest under the major subclass including that type.

The schedule of old class 212, cranes and derricks (now traversing hoists), is appended:

CLASS 212.—*Cranes and derricks.*

SUBCLASSES.

1. CRANES AND DERRICKS.
2. RECTILINEARLY-MOVABLE LOAD SUPPORT—
3. Electric.
4. Hydraulic.
5. Longitudinal shaft driver.
6. Stationary motor.
7. Traveling motor.
8. Load-lifting devices.
9. ROTARY LOAD SUPPORT—
10. Vertically-adjustable jib.
11. Motor operated—
12. Vertically-adjustable jib.
13. ROTARY RECTILINEARLY-MOVABLE LOAD SUPPORT.
14. STATIONARY LOAD SUPPORT.
15. Jib.

In the ordering of subclasses and numbering of them, the Patent Office classification merely follows, so far as the matter dealt with permits, the logical rule called by some logicians "subordination of characteristics." The following sentence from Mill states the rule:

"The requisites of a classification intended to facilitate the study of a particular phenomenon are, first, to bring into one class all kinds of things which exhibit that phenomenon, in whatever variety of form or degree; and, secondly, to arrange those kinds in a series according to the degree in which they exhibit it, beginning with those that exhibit most of it and terminating with those that exhibit least."

It is obvious also that this order of superiority and inferiority of arrangement is the natural and historical order of invention. The first efforts doubtless were directed to the complete satisfaction of a particular ultimate desire, and only later were inventive efforts limited to development of means for satisfying general and subsidiary ones and to improvement in details. The same rule should be applied to relation of classes to each other as to the subclasses in a class.

The rule of exhaustive division is followed by providing a miscellaneous subclass for each class and for each subclass that has been subjected to subdivision. The same rule is intended to apply to groups of classes having a common generic basis. The miscellaneous subclass is not always entitled miscellaneous, but more frequently bears the generic name of the matter included in it.

The miscellaneous subclasses are placed higher (lower number) or made superior to those indented thereunder, whether they are more intensive or are subclasses for parts. This does not follow the order of the bifurcate plan wherein the more indeterminate division comes always to the right and is therefore read last. It follows the ordinary index order. It provides for cross referencing always downward or from lower to higher numbered subclasses. Placing the miscellaneous subclasses of each group last in the group would be in accordance with the ancient practice in bifurcate division and would have the material advantage of always presenting to the eye, while scanning the schedules progressively, all the limited subclasses first, and last the indeterminate or "all other" one. There would be no jumping backward ("pilger steps")[1] in the progression. Its adoption presents some mechanical difficulties, as, for example, when subdivision of an undivided major subclass becomes necessary, and would at times require exceptions to the rule of cross referencing. But the miscellaneous subclass is not a generic subclass. It contains mixed matter. It has been placed highest because of the potentiality of including in it more complex structure than in the subordinate subclasses, and the position best obeys the rule of subordination. (See pamphlet, "Plan of classification.")

It is difficult in Patent Office classification to make absolutely mutually exclusive subclasses. Although each group divided is always sought to be broken up on a uniform basis, a strict adherence to it would render the schedules exceedingly complex in very many classes. Where the rule of mutual exclusiveness is deemed impracticable, the entire group must be searched in a percentage of the searches or deficiencies supplied by cross referencing.

TITLES OF CLASSES AND SUBCLASSES.

The question is continually arising respecting the propriety of giving a class or subclass a sufficiently broad title to include everything in the class or subclass, but too general to be readily recognizable to the uninitiated as inclusive of certain matter; or of assigning a popular, easily recognizable title and generalizing it to include that which its popular meaning does not include. These questions are settled as they arise according to what seems at the time most appropriate.

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[1] A term applied to swaging seamless tubes wherein the tube is advanced a long step and thrown back a shorter step; said to have been derived from the practice of a German sect in marching taking two steps forward and one backward in alternation.

The title of the old class of steam boilers was changed to liquid heaters and vaporizers because it includes things identical in principle with steam boilers but designed for use in heating oils, evaporating solutions, etc. The title "Motors—fluid current," includes elements adapted to form parts of such motors and most commonly found there, but also adapted to be parts of other machines.

The logical expedient of "type species" has at times been used in subclass titles intended to be generalized, as in the title "Calcium light type" (class 67), as a designation of illuminators operating on the principle of the calcium light whether using a block of lime as the incandescing substance or some substitute.

There has never been in the past any rule of nomenclature of classes. But in the classes dealing with electrical energy, it has been customary from the beginning to entitle each electrical class "Electricity," and then place after it the particular branch of electricity to which that particular class applies, as, for example, class 171, electricity, generation; 172, electricity, motive power; 173, electricity, conductors, etc. All means for converting various forms of energy into electrical energy, transmitting, controlling, and reconverting it into energy of other forms, was originally included as a subdivision of a class known as philosophical instruments. In the classification of 1872 a class known as electricity was established. In the classification of 1885 electricity was broken up into nine classes, one of which remained as a sort of miscellaneous class and was entitled "Electricity, special applications."

The development of the electricity classes illustrates a natural process of subdivision which in general should be followed in classification. One great trouble with the existing and prior classes in the Patent Office classification is and has been that titles have not been sufficiently comprehensive. Examiners have contended that new applications for inventions more nearly like those within their jurisdiction than like those of other examiners should not be placed in their classes because not within the language of the titles. As in the grouping of subclasses within classes some have been given broad titles, so in the grouping of classes with respect to some generic principle some should be given generic and comprehensive titles, as otherwise certain inventions will be waifs which some class or other will have to be forced arbitrarily to adopt. At the head, as it were, of each well-developed subject of invention, there ought to be a class comprehensive enough to receive all future inventions that are peculiar to that subject. At the head of a group of classes dealing with the inventions peculiar to the conversion, transmission, and control of energy should be a class broad enough in title to receive any invention that goes no further than to deal with energy (does not manufacture, etc.). Again, with the generic group of phenomena of energy there would be many species. At the head of the group of motors, for example, there would be a generic class of motors. Under it should be classes of various specific motors. Any motor not of any specific type, for which no definitely named class is provided, should go to the miscellaneous, generically named class. So, also, there should be now a class comprehensive enough to take inventions peculiar to the phenomena of electricity that are not of the kind for which the specific classes of generation, motive power, conductors, etc., have been provided. When inventions peculiar to the phenomena of radiant energy, whether ol light, heat, or Hertzian waves, or other forms, become applied so as to produce manifestations of mechanical, chemical, or other activities of a general nature, a comprehensive class is necessary to provide for assembling like inventions, otherwise a means for utilizing such energy for closing a circuit to a sounder, to a Morse instrument, to an igniter, to a motor, etc., would be likely to get into widely separated classes in accordance with the ulterior use. Under the broad class designed to receive means dealing with radiant energy, there may be classes dealing with light, for example, or dealing with special applications of radiant activity, such as radiotelephony, radiotelegraphy, radioprinting, radioigniting, or the like.

It does not matter that a title of a class may be as broad as the genus. Man and rat are separate species of different orders of the class mammalia. In the natural sciences there are no subdivisions coextensive with the genera. It has never been found necessary (except, perhaps, in the case of the lowest orders of animal life). In the classification of ideas of means in the useful arts it has been found necessary to have always a miscellaneous class or subclass wherever division has been made, this group being both miscellaneous and generic and preferably retaining the generic name when species are divided from it.

The nomenclature of classes is, therefore, somewhat related to the basis of classification. As long as the title is no broader than the inventions designed to be received in the class to which the title is applied, there is no objection to such titles, but on the contrary they are of distinct aid. It is always to be borne in mind that in classification the word "peculiar" should be prefixed to the function, effect, or natural phenomena, or whatever is adopted as the basis of the class or subclass.

DIAGNOSIS.

Most patent specifications and nearly every patent drawing disclose more or less clearly other inventions than that which the applicant seeks a patent for. For instance, the typical wire-nail machine has a wire-feeding mechanism, a shearing mechanism, upsetting (forging) mechanism, side serrating mechanism, and pointing mechanism; it may also have a counting mechanism or even a packaging mechanism, an electric motor on its frame for furnishing power, and, in addition, numerous power-transmitting and other machine parts, such as bearings, oil cups, safety appliances, etc. The applicant may have made a complete new organization of nail machine and seek a patent for the total combination. He may have invented a new shearing mechanism and chosen to show it thus elaborately in the place of use he had in mind, or he may have designed a new counter or a new oil cup or a new power transmission, or even a new motor, and given his invention this elaborate setting. The shears, the counter, the oil cup, the power transmission, and the motor are separately classifiable in widely separated classes. How shall the application be diagnosed for determining its place in the office classification?

Disclosure of an invention is what anticipates. That which is claimed is that which is patented; but that which is disclosed is plainly of prime importance in classifying. When a patent specification and drawing show, as most of them do, several inventions, though claiming only one, which of those several inventions shall control the classification? The most natural procedure, at first thought, would be to classify on the totality of the showing, in which case the application for the nail machine, supposed above, would be assigned to nail making. But imagine the invention claimed to be the counter. Then the examiner in charge of nail making would have to search the class of registers with which he is not familiar. Suppose applicant No. 2 files an application for the same counter, which he illustrates and describes in connection with a bottle-filling machine, and that, classifying on the totality of the showing, this goes to the division that has the class of packing liquids. Now both the examiners in charge of bottle filling and nail making, knowing that counters are classified in registers, search the class of registers and also the pending applications in registers. After these examiners have made their search, suppose applicant No. 3 files an application for the same counter, which he says may be used for counting small articles produced by automatic machines; perhaps he shows the counter attached to a piece of conventional mechanism representing any manufacturing machine, mentioning, say, a cigarette or pill or cartridge making machine. It has not occurred to either the examiner of nail making or the examiner of bottle filling that the other might have any such application; nor does it occur to the examiner in charge of registers to search nail making or bottle filling. As the specification of the counter application mentions ciga-

rette, pill, and cartridge making machines to which the counter may be attached, the examiner in charge of registers may search those classes. Suppose that the counter proves to be new, and all three of the examiners allow a patent. Here now are three patents for the same thing. Of course, after allowance, the counter and all other disclosed inventions that give any suggestion of novelty are cross-referenced; but the primary purpose of a Patent Office classification (an aid to determine patentability) in this instance has failed.

In the imagined situation, without doubt, diagnosis and classification upon the invention claimed is necessary to effect the purpose of the office classification. Cross referencing after issue locks the stable door too late. If no application save that of the nail machine be pending, no duplication of patents occurs, but the labor of search is increased by reason of the unfamiliarity of the examiner with the inventions he has to search. After the patent is allowed he may find the entire combination of the nail machine, without the counter, disclosed in a patent for a nail-making machine, so that as a nail-making machine this new patent is of no value as a reference. Very probably all of the other inventions illustrated (except the counter) are also old in their respective classes; but the examiner of nail making can not tell that without extensive searches in those classes, so he notes cross references for them all.

The rule adopted is to diagnose by the most intensive claim (measured by the major elements of it). No other rule can be reasonably applied to pending applications. Should a different rule apply to patents? After the examiner who has passed upon the patentability of the claimed invention has signed the file, ought he to change the classification so as to send the patent when issued to that other examiner who has charge of the inventions in connection with which the claimed invention is illustrated and described? Should, for example, the examiner in charge of fluid-pressure motors who signed the file of reissue patent No. 4882 (fig. 8) have marked it for classification in the class of sewing machines because illustrated and described in combination with a sewing machine?

If the patent is to be assigned by the entire disclosure, when that differs from the matter claimed, the matter claimed must be cross referenced; if it is to be assigned by the matter claimed, the entire disclosure must be cross referenced. In either case copies of the patent are placed in both classes. If a patent disclose three differently classifiable inventions and claim but one, it is evident that three copies of the patent must be placed in the three different subdivisions respectively adapted to receive them. Whether the classification be made original in the subdivision provided for the claimed invention, or in one of those provided for the invention shown but not claimed, all of them disclosed in the patent become properly placed, and in either eventuality the requirements of search are satisfied.

It is obviously impracticable to cross reference everything disclosed in all patents. It must be assumed when a new organization of nail machine, for example, is claimed, that the shear, gears, oil cups, etc., not claimed, are not new with the applicant. If such an assumption were not justified, there would be no end of cross references. Here again classification practice must be guided by the patent law. The aspect of the legal nature of a claim and the presumptions raised by it are set forth in the Supreme Court decisions previously quoted from. All patentable inventions are either combinations of acts or combinations of mechanical elements. By the laws of thought and a fortiori by the law of patents no one can invent a combination of elements or acts unless the individual elements or acts entering into the combination had a prior existence. If the inventor were unaware of them of course he could not combine them. These elements must have been either the production of nature or of another's mind or of his own. If they were products of nature, they are not the subject of a patent. If they were the production of some one else, they are either public property or the property of that other, and not new. If they are his production, he may fairly be trusted to claim them. The great weight of probability, therefore, is

always that the matter claimed is new, and that not claimed, although shown, is not new. It seems fair to assume that an applicant or his solicitor will claim all that is new with the applicant. It seems reasonable to suppose that better results will follow placing a patent by that which is presumptively new in it than by that which is presumptively old. It seems more economical to classify by the presumptively new and cross reference the presumptively old (if any question of the conclusiveness of that presumption is suggested) than to classify by the presumptively old and of invariable necessity cross reference the new. The rule of preponderance of evidence would select the claim as the guide for placing an application or a patent, and the classifier must exercise his best judgment about cross referencing.

Rule 36 of the Rules of Practice requires that "the description and the drawing, as well as the claims, should be confined to the specific improvement and such parts as necessarily cooperate with it."

If this rule were strictly construed and enforced, the situation imagined above with respect to the nail machine could not very well arise, because the illustration and description of all the mechanism unnecessary to the operation of the counter would have to be eliminated; but if the extraneous matter does not require additional sheets, if it can appear on the same sheets with the claimed invention, the language "such parts as necessarily cooperate with it" has been commonly held to permit such prolixity of showing on the theory that the public is benefited by all disclosures for which a monopoly is not claimed.

The practice of diagnosing by most intensive means claimed in preference to most intensive means disclosed but not claimed has been the subject of strong adverse criticism, the reason for which has not been apprehended by the Patent Office, but may be that in the unrevised classes no cross referencing has been done.

By the adoption of the claimed invention as a mark by which to diagnose a patent for classification purposes a standard is established. Mere disclosure would prove an uncertain standard. Speed-changing gears, for example, would be now here, now elsewhere, as they were illustrated by the inventor in accordance with the accident of use, in motor vehicles, milling machines, lathes, merry-go-rounds, etc., and the classifier would be constantly against the question, Is there such showing of the machine to which the invention is applied as to render it a disclosure of such machine?

Given ideal disclosures and ideal claims in patent specifications, the amount of cross referencing required in a classification in order to render all things available for search would be a measure of the excellence of the classification. The more cross referencing necessary the more erroneous the classification. Under conditions as they are met no classification can be made without extensive cross referencing and cross notations. Special purpose machines will disclose and include features and principles of utility in general utility machines; general utility machines will disclose parts in common with those of special utility, and all machines will include and disclose machine elements. If that which is claimed were the actual invention and the actual novelty and each patent were limited by law to one invention, there would need be relatively little cross referencing. But it is plain enough that if all disclosed structures to the least element had to be cross referenced because shown in the more complex structures, the subclasses of details would contain all the patents in a class, and the object of logical division defeated for those subclasses. So, also, almost every patent in every machine class would have to have numerous cross references to the machine element classes.

EXTENSION OF THE PLAN OF CLASSIFICATION TO COORDINATION AND SUBORDINATION OF CLASSES.

Doubtless the principle of coordination and subordination applied to the subclasses of a class should be applied to coordinating and subordinating the classes with respect to each other. A correct arrangement of classes with respect to each

other and the broader natural divisions of the useful arts would afford the same assistance in studying and reaching conclusions which it is the object of a classification to aid as does such an arrangement of subclasses in a class.

The word "class," when first applied in Patent Office classification, was a designation of the broadest divisions of the industrial arts, and at that time was applied to very broad groups. But as the number of patents has increased, and those classes have been divided to make other classes, the title, class, has been retained, so that now it does not signify collections of inventions based upon such broad characteristics as it formerly did. Perhaps this is a disadvantage and it would be well to limit the designation to broader groups, as is done in the scientific classifications generally. However, that is a mere matter of nomenclature, with which this subject is, however, somewhat intimately connected, as it requires arrangement of generic and specific titles in coordination and subordination. With a correctly worked out scheme of classes, affording a more comprehensive view of the field of invention, it is probable that it would be easier to maintain lines than without such a scheme. Undoubtedly the failure to provide such an arrangement is a violation of a rule of logic that a classification should not "leap." Assuredly the present classification does leap from the heading "useful arts" to two hundred and forty odd subdivisions, based upon relatively intensive characteristics, the same generic characteristics frequently running through a number of such classes.

The ordering of classes into a definite scheme of mutual coordination and subordination would need, for most efficient use, a corresponding classification of the office personnel. The personnel could be grouped in accordance with the character of its duties, which should be the examination of certain kinds of inventions; for example, one large group of inventions may be deemed to be those relating to the production of material things. This might possibly be divided into three large branches, including, for example, (1) means for giving shape to substances; (2) means for producing and conditioning substances (formless); (3) means for extracting substances from their positions in nature. Another grand subdivision might be, for example, means to aid in propagating, conserving, and modifying living organisms; a third, means for producing relative motion; a fourth, means for imparting information; a fifth, means for converting energy; and a sixth, general structure based upon the very general utility of support, conservation, and protection of various forms of matter, and utilizing forces in equilibrium.

The above groupings are merely exemplary, and before settling upon the basis of any such groups the most careful consideration should be given to the subject. The purpose in naming these particular groups is to exemplify how the personnel and the subject matter which they have to study in determining questions of patentability might be coordinated within the office.

There is nothing new in this notion even to the Patent Office. In this connection reference may be had to the report of Commissioner Leggett (1 O. G., 247), March 19, 1872, which was a special report approved by the Secretary of the Interior and the President of the United States, urging a classification of the personnel on the lines indicated above to correspond to the grouping of classes. This proposition contemplated making nine groups, assembling in these groups such of the 145 classes as appeared to the commissioner to be most closely related.

It is plain now that the proposed grouping was crude, and that the advantages coming from such a grouping at that time could not be deemed to compare with the advantages coming from a similar grouping more accurately worked out at the present time. At that time, the examining force was composed of only 66 persons, including 22 principal examiners, each at the head of one of the 22 examining divisions, and each having only two assistants. The grouping into nine parts would have made each major group or section consist of only about five assistants, two principal examiners, and one supervisor. The field of search in the industrial arts then comprised only about 130,000 United States patents.

THE ARRANGEMENT OF THE CLASSES IN THE MANUAL OF CLASSIFICATION.

The Manual of Classification now contains the classes following one another in numerical order.

In the classification pamphlet of 1880 the classes were thus arranged, but since that all classification manuals except the last have been printed with the classes grouped by examining divisions. Such a grouping is perhaps more desirable for the use of the Patent Office, and if it could be similarly carried out in connection with a classification and coordination of the classes and personnel so as to have only homogeneous or closely related subject matter in any one examining division, such an arrangement would be most suitable both for the office and the public. Under existing conditions, however, classes are being frequently shifted from one division to another as required by the exigencies of even distribution of work, whereby the arrangement by division rapidly became obsolete and confusing to the general public. The public generally finds it of major importance to locate conveniently the position of a class in the manual and of minor importance to know what examiner has the class in charge. It was accordingly decided to print the classes in the numerical order in the last manual and prefix an index of classes by divisions.

In the current manual the subclasses of each class are printed in alphabetical order. This undoubtedly injuriously affects the ease with which the advantage of the principle of subordination on which these classes are divided may be obtained. The printing of the subclasses alphabetically was continued from the original practice. Undoubtedly when persons know the names of subclasses the alphabetical arrangement is a good one for enabling them to be found, but it may be assumed that the searcher usually is not aware of the classification title of any particular subclass or group in which what he is looking for may have been placed. The search being one for an applied idea rather than for a name, it would seem more logical to arrange the ideas in the natural order rather than to arrange the mere names of subclasses in alphabetical order. A rather famous example of this idea arrangement is found in Roget's Thesaurus. The classification being for the purpose of aiding in locating an invention, perhaps the arrangement of the groups in the classification should be directed primarily to this purpose. It is thought that whatever utility an alphabetical arrangement of subclasses may have would be better served by an appropriate alphabetical general index.

However, it was deemed best to print the last manual with the subclasses in alphabetical arrangement as hitherto, because, for one thing, the manual contains mixed revised and unrevised classes. No advantage could be gained by printing the subclasses of the unrevised classes in numerical order because there is no logical subordination in those classes and the alphabetical order is therefore clearly better. Although there would be the named advantage in printing the revised classes in numerical order, yet it was decided to continue as heretofore with the alphabetical arrangement, as some confusion in the minds of persons using the manual might otherwise arise. With respect to printing the schedules in both numerical and alphabetical arrangement, there was the objection to the excessive cost of printing to the Patent Office.

Ultimately, if the scheme of classification can be fully carried out, the same uniformity should run from the title of the summum genus, "useful arts," down through all the grand divisions (classes) to the minutest subclass, the arrangement being that of subordination of ideas rather than alphabetical. The alphabetical arrangement, as has been hitherto stated, is the historical one of the office classification. It accounts for the ordering of the classes with respect to each other and for the numbering of the classes which has never had any definite meaning as regards relationship of ideas.

THE INDEX TO CHEMICAL LITERATURE.

[A statement prepared by the Patent Office.]

ACTIONS BY THE ASSISTANT EXAMINERS.

In acting upon an application for a patent, the assistant examiner determines the question of novelty by an examination of the prior art, the statute providing that a prior description in any printed publication, in this or any foreign country; e. g., domestic and foreign patents, published books, periodicals, etc., will bar the grant.

To facilitate the search as to novelty, the domestic patents have from an early date been divided into various classes and subclasses; and some years since the Classification Division was organized for the following purposes, viz:

First. Revising and perfecting the classification of domestic patents.

Second. Extending the classification to include the files of foreign patents.

Third. Applying the classification to the literature (books and periodicals) contained in the scientific library of the office, which latter work will probably take the form of an index or digest.

In the case of mechanical devices, the search of the literature is as a rule of far less importance than in the case of applications relating to things chemical, and therefore up to the present time no attempt has been made to classify or digest the existing literature of the mechanic arts; but in the case of chemical literature this work was commenced more than 12 years since, because of the great difficulty then experienced in searching chemical literature as to the question of novelty, and also because chemical literature must be searched far more frequently than in the case of the mechanic arts.

CHEMICAL PATENTS, FOR WHAT GRANTED.

Under the law chemical patents may be granted:

First. For the substance itself as a new composition of matter.

Second. For the method or process of producing it.

Third. For machines, apparatus or tools, especially adapted for use in producing it.

The chemists of the world are discovering and describing in scientific books and periodicals thousands upon thousands of new substances every year, and likewise a similar number of new processes for the production of old substances, and new apparatus for use in such processes.

CHEMICAL DISCOVERIES NOT USUALLY PATENTED.

Now while in the aggregate the number of chemical patents actually granted in a year by this and foreign countries is quite large, the percentage of chemical substances described in literature which are made the subject of product, process, or apparatus patents is exceedingly small, because most chemists work in the field of pure rather than applied science, and are, on principle, opposed to monopolizing their discoveries through the medium of patents. They freely publish their discoveries to the world, for the benefit of the world, but as a rule do not patent their chemical discoveries; and chemical patents, are, therefore, almost wholly granted to those interested in manufacturing establishments, either as proprietors or as individual workers in the factory or research laboratory.

As a result the search as to novelty will frequently fail if confined to patents alone, because the chemical discovery was never patented, but described in chemical literature only.

CONDITION OF AFFAIRS BEFORE THE INDEX WAS COMMENCED.

Before the chemical card index was commenced anything like a complete search of the literature was practically impossible, and the validity of chemical patents was more or less in doubt, for after the most elaborate search possible was made, a

five-line paragraph in the files of some little-known chemical journal, published, say, in Japanese, Russian, or other not readily understood language, would be sufficient if cited in court to invalidate the granted patent.

SCOPE OF THE INDEX.

In planning the chemical card index, since it was manifestly impossible to index all chemical literature, it was decided to cover the work of the past by making a judicious selection of certain works of a general nature, such as the 20-volume work of Gmelin, the annual volumes of the Chemical Society of London, the 4-volume edition of Watts's Dictionary of Chemistry, Richter's Lexicon of Carbon Compounds, and other works of that character; and thereby by indexing these works the literature of the past would probably be as completely covered as it could be by any plan which the office had the force and means available for accomplishing.

For the future it was proposed to keep the abstract journals of the Chemical Society of London, the German abstract periodicals, Berichte and the Centralblatt, and other works of that character indexed up to date.

Later when the American Chemical Society in 1907 commenced the publication of its very complete set of abstracts it was determined to omit the periodicals in German and other foreign tongues, and retain in the card index only the yearly index volume of the Chemical Society of London in addition to the American abstracts.

GENERAL PLAN OF THE INDEX.

The following is the general plan of the work: If chemical bodies each had but one instead of several names, and if in chemical literature one never met with bodies as yet unnamed, and therefore referred to by their chemical formulas only, then undoubtedly the dictionary plan pure and simple, in which the names of the substances were alphabetically arranged, and the references to literature and patents were collected under their proper titles, would answer every requirement, and would be, in fact, the only proper system to use.

Practically, however, most bodies known to chemists have a plurality of names, and the names approved and used in prior decades are generally not the names in highest repute or in ordinary use to-day, nor is it at all sure that the names now in use will in most or even in many cases remain in use in years to come.

DIFFICULTIES OF THE DICTIONARY PLAN.

Where a chemical compound has several names (as indeed is usually the case), were it possible to decide now (which perhaps might be done) which one of them was, on good scientific grounds, the most appropriate for index purposes in view of present knowledge, and, further (which course could not be done), could one be assured that such name would remain the approved name for all future time, such title could, without hesitation, be now adopted as the indexing title, under which all references to literature or patents could be entered, and all other titles and names cross referenced into it; but while this might be done now in certain cases, which and how many of these names now used and approved will remain in use in years to come is something that no one can at present determine.

Evidently the dictionary plan, unmodified, is not the best, and some better system must be devised not open to these objections.

SYSTEM ADOPTED BASED ON THE CHEMICAL FORMULA.

In establishing for the Patent Office a card index to chemical literature, it was therefore decided to use, as an indexing basis, the kind and number of the component atoms of a chemical compound, these being its most unvarying characteristics, being subject only to the errors of chemical analysis, and being, therefore, the most stable

and unchanging basis for any scheme for the indexing and digesting of chemical literature; a conclusion reached at about the same time independently by Richter, as illustrated in his since published Lexicon der Kohlenstoff-Verbindungen, and by other later workers in this field, the Patent Office system differing from that of Richter in being simpler, and of more general application.

It was found that the simplest, most certain, and most direct system, was to rewrite the so-called empirical chemical formula in a particular manner, that is to say, writing the atoms in the alphabetical order of their chemical symbols, upon Library Bureau catalogue cards of standard size, and then placing these cards in standard Library Bureau cases, the cards being arranged in alphabetical order. For example, take the following chemical compounds:

$(CH_3)_2C_2H_2(NO_2)_2$	Dinitrobutane.
$(CH_3)_2CHNO_2$	Isopropylic nitrite.
$KH_3C_2O_4$	Potassium acetate.
CH_3Cl	Methyl chloride.
$Cu(AsO_2)_2$	Copper arsenite.

Rewriting them as above and arranging them alphabetically by formulas instead of titles and we have:

As_2CuO_4	Copper arsenite.
CH_3Cl	Methyl chloride.
$C_2H_3KO_4$	Potassium acetate.
$C_3H_7NO_2$	Isopropylic nitrite.
$C_4H_8N_2O_4$	Dinitrobutane.

It should be noted, however, that the compounds containing C and H, and broadly included in the domain of organic chemistry, constitute so large and important a class that we are fully justified in departing slightly from the strictly alphabetical arrangement of chemical symbols, and writing C always first and H accompanying C always second, in order thereby to bring more closely together in the index bodies more or less closely related in chemical and physical properties.

In practice, therefore, the following general rule has been followed in compiling the chemical card index of the Patent Office:

RULE FOR INDEXING AND CONSULTING.

Reject the water of crystallization and rewrite the empirical formula in the alphabetical order of the chemical symbols, except that in carbon compounds write C first and H second; follow this rewritten formula with the constitutional formula, when given, adding the water of crystallization, if any; but arrange the cards alphabetically by the rewritten formula.

The reason for disregarding water of crystallization may be illustrated as follows: The three bodies, Na_2SO_4 or anhydrous sodium sulphate, $Na_2SO_4+10\ H_2O$ or Glauber's salt, and the heptahydrated salt, $Na_2SO_4+7\ H_2O$, are in this way indexed under the same indexing formula Na_2O_4S, and are thereby brought together in the index as they should be, in one place, for in solution they are chemically identical. If, on the other hand, water of crystallization was taken into account for indexing purposes, the corresponding indexing formulas would become Na_2O_4S; $H_{20}Na_2O_{14}S$, and $H_{14}Na_2O_{11}S$, respectively, and these three practically identical bodies would, in consequence, be widely separated in the index, which result would evidently be a very undesirable one.

LIBRARY METHODS ADOPTED.

The index was commenced and has been continued on the library-card catalogue plan, using the regular Library Bureau standard card, size 7½ by 12½ centimeters, or approximately 3 by 5 inches, without rulings except a single blue horizontal line

ruled ¾ of an inch below the top edge of the card—this for typewritten cards and cards upon which printed matter cut from books and periodicals is pasted. A limited use has also been made of cards having ruled lines, where for certain reasons the cards are written by hand.

The following is a sample set of cards as actually prepared for the index in a given instance, reduced to about three-fifths of the exact size of the cards used:

One formula card:
(No. 1.)

$C_{12}H_{18}Fe_2O_{12}$	or	$(CH_3CO_2)_6Fe_2$

FERRIC ACETATE; ACETATE OF IRON; KLAPROTH'S IRON TINCTURE; TINCTURA FERRI ACETATIS; IRON TINCTURE, KLAPROTH'S.

See A Treatise on Chemistry, by H. E. Roscoe and C. Schorelemmer, vol. 3, Organic Chemistry, Part I, page 505.

One polymer or multiple formula card:
(No. 2.)

$C_6H_9FeO_6$		Polymer Class 2.
$C_{12}H_{18}Fe_2O_{12}$	or	$(C_6H_9FeO_6)_2$

FERRIC ACETATE.

Two classification cards:
(No. 3.)

ACETATES.
FERRIC.
$C_{12}H_{18}Fe_2O_{12}$ or $(CH_3CO_2)_6Fe_2$

(No. 4.)

IRON.
ACETATE OF.
$C_{12}H_{18}Fe_2O_{12}$ or $(CH_3CO_2)_6Fe_2$

Four subject matter or title cards:
(No. 5.)

FERRIC ACETATE.

$C_{12}H_{18}Fe_2O_{12}$.

(No. 6).

KLAPROTH'S IRON TINCTURE.

$C_{12}H_{18}Fe_2O_{12}$.

(No. 7.)

IRON, KLAPROTH'S TINCTURE OF.
$C_{12}H_{18}Fe_2O_{12}$.

(No. 8.)

TINCTURA FERRI ACETATIS.
$C_{12}H_{18}Fe_2O_{12}$.

Of these cards Nos. 1 and 2 would be filed in the formula section of the index, and the remainder in the title or alphabetical portion of the index.

In card No. 1 the last two lines, with the exception of the numbers of the volume part and page, are stamped on the card with a rubber stamp, since this matter is repeated on all the cards made from the same book. The volume part and page numbers are added in ink or typewriting by the indexer.

When a citation is made to a patent instead of to a book or other printed work, the reference given will be about like this: "See U. S. Patent No. 319082 to Fahlberg, dated June 2, 1885."

ARRANGEMENT OF FORMULA CARDS IN THE CASES.

The arrangement of the formula cards in the index is an alphabetical one. Thus, for example, as arranged Ag comes before C_1; C_1 before C_2; C_2H_3 before C_2H_4; C_2H_6 before C_3H_6KO, etc., as indicated in Table 1.

The following series will more fully illustrate the principles on which the formula cards are arranged.

TABLE 1.

Column 1.	Column 2.
$CAgNO$.	$C_7H_9N_5O$.
$CAgS$.	$C_{10}H_{12}N_2O_6S_2$.
CAg_2O_3.	$C_{18}H_{15}Cl_3P$.
$CClHgN$.	$C_{10}H_{15}NO_3$.
CCl_4.	$C_{17}H_{12}N_2O_5$.
$CCuN$.	$C_{22}H_{15}ClN_4O$.
$CHBr$.	$C_{27}H_{27}N_3Na_2O_7S_2$.
$CHCl_3$.	$C_{34}H_{24}N_6Na_4O_{16}S_4$.
CH_3AgNO_3S.	$C_{27}H_{27}N_3Na_2O_7S_2$.
CH_3Br.	$C_{40}H_{52}N_4O_{12}S$.
CH_3AsClO.	CdO_4S.
CH_6ClN.	$ClCu$.
$C_2H_3CaClO_2$.	ClH_2Hg_2NO.
$C_6H_4AgNO_2$.	DiN_2O_5.
$C_7H_8N_4O_2$.	HKO_3S.
C_7H_8O.	O_3S.

POLYMER OR MULTIPLE FORMULA CARDS.

Reference has already been made to the so-called polymer or multiple formula cards, which perform the following function:

There are many bodies which analysis shows to be composed of certain elements in certain proportions, but for which theory at present indicates a formula containing two, three, or more times as many atoms. Thus at one time the formula of ferric chloride was written $FeCl_3$, at a later period Fe_2Cl_6, and at the present time the older form $FeCl_3$ is usually used, and such doubled and tripled formulas are quite common.

In all cases where in the formula as written the exponents of all the atoms have a common divisor after the doubled, tripled, or other formula as found is used for preparing the formula card, the formula is then reduced to its lowest terms by dividing the exponents by their greatest common divisor, and a polymer or multiple formula card is made out in the form shown by the sample (card No. 2). The words "Class 2" "Class 3" used above the line on the right-hand corner of the cards indicates the common divisor.

In this way the index is rendered independent of any changes in the formula consequent upon future changes of view with reference to constitutional formulas and other matters of theory.

SYSTEM INDEPENDENT OF CHANGES IN CHEMICAL THEORY.

A mere reference index or digest should in no way depend upon any theory subject to future changes with advancing knowledge, and by basing the index upon the unchanging empirical formula, derived from the chemical analysis of the substance, and checked by the use of polymer cards, the system is not affected by changes of viewpoint and advances in chemical science.

REFERENCES PLACED UPON FORMULA CARD.

But little further description is required besides the general statement that all of the references to the literature or patents of chemical bodies are intended to be entered on the formula rather than the title card, the title cards being used as cross references, referring the inquirer to the formula card for all required information.

PRODUCT PROCESS AND APPARATUS CLAIMS.

It has already been stated that in chemical patents the claims relate to either product, process, or apparatus, or to any two of these, or to all three of them combined.

The following are submitted as examples of these three classes of claims as found in chemical patents already issued by the office:

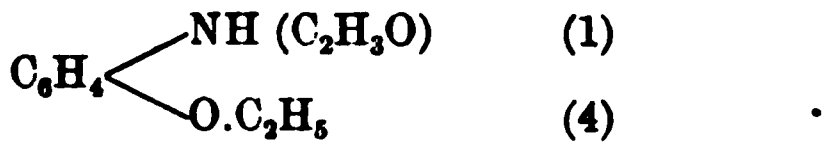
PRODUCT CLAIMS.

Product claims are submitted from three United States patents to illustrate the nature of same, viz:

United States patent 400086, dated March 26, 1889, for phenacetine, issued to Oskar Hinsberg.

Claim 1 reading: "The product herein described, which has the following characteristics: It crystallizes in white leaves, melting at 135° centigrade; not coloring on addition of acids or alkalies; is little soluble in cold water, more so in hot water; easily soluble in alcohol, ether, chloroform, or benzole; is without taste, and has the general composition $C_{10}H_{13}O_2N$."

Line 70, page 1, of this patent shows the structure of the body to be—

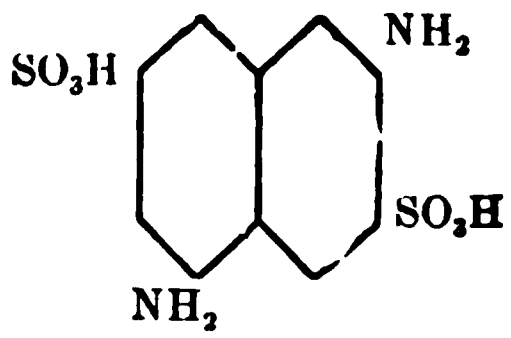


We also have—

United States patent No. 498882, dated June 6, 1893, for naphthylene-diamine disulpho acid, granted to Richard Hoffmann, claim 2 reading:

"The new 1.5 diamido naphthylene 3.7 disulphonic acid being almost insoluble in water, forming soluble crystallizing sodium and potassium salts, a difficultly soluble barium salt, a light yellow insoluble tetrazo compound, which combined with phenols or amines forms azo coloring matters of great technical value."

Line 65, page 1, of this patent shows the structure of the compound to be—



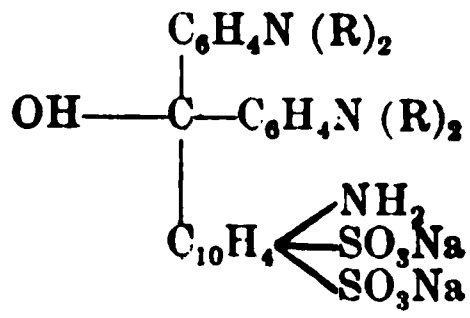
Having the empirical formula $C_{10}H_{10}N_2O_6S_2$.

Also the following:

United States patent No. 506918, dated October 17, 1893, for blue coloring matter, issued to Richard Kothe et al.

Claim 2 reading:

"As a new article of manufacture the blue coloring matter having probably the formula—



(in which formula R signifies methyl or ethyl), forming a dark powder with bronze luster, easily soluble in water with bluish-violet color, in alcohol and pure acetic acid

with a clear blue color, dissolving in concentrated sulfuric acid with a reddish-brown color, which turns into blue on the addition of a great excess of ice water, being separated, on adding very strong soda lye to its concentrated solution in water, in reddish-violet flakes, which dissolve again on adding water to this solution; producing when fixed on wool, or printed on cotton, clear blue shades fast against the action of alkalies and acids."

PROCESS CLAIMS.

Process claims are also submitted from three United States patents to illustrate the nature of such claims, viz:

United States patent No. 544104, dated August 6, 1895, for bismuth oxyiodidgallate and process of preparing same, issued to Fritz Ludy.

Claim 1 reading—

"The process of manufacture of bismuth oxyiodidgallate by the reaction of gallic acid upon bismuth oxyiodid, substantially as described."

Line 55, page 1, gives the formula as—

$$C_6H_2(OH)_2COOBi(OH)I \text{ or } C_7H_5BiIO_5$$

Also the following:

United States patent No. 606288, dated June 28, 1898, for oxyethylacetanilid, issued to Otto Klimmek.

Claim 2 reading—

"The herein described process of making oxyethylacetanilid from para amido phenetol, consisting in heating therewith equal molecules of glacial acetic acid continuously in a water bath. then dissolving the mass in approximately eighty parts of boilin water, with the addition of animal charcoal, then filtering and crystallizing out the solid."

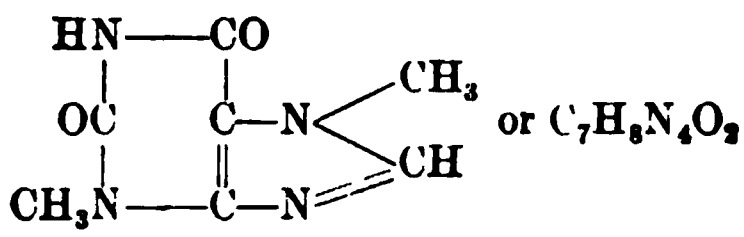
And also the following:

United States patent No. 631705, dated August 22, 1899, for a process of making theobromin, issued to Emil Fischer.

Claim 16 reading—

"The process of preparing theobromin wnich consists in dissolving 3-7-dimethyl-6-amido-2-oxy purin in water and sulfuric acid and heating the solution, then adding sodium nitrite to the solution and agitating, while maintaining the heat, the proportions and temperature being substantially as set fort , then draining the precipitated theobromin by filtering, and then treating the filtrate with sodium nitrite in the same manner as above to obtain an additional yield of theobromin."

Line 25, page 1, of the patent shows that theobromin has the following structural formula:



or $C_7H_8N_4O_2$

APPARATUS CLAIMS.

Apparatus claims are also submitted from three United States patents to illustrate the nature of such claims, viz:

United States patent No. 834257, dated October 30, 1906, for apparatus for making nitric acid, issued to Oscar H. N. Brunler.

Claim 1 reading—

"In an apparatus for the oxidation of the nitrogen of the air for the purpose of obtaining nitric acid, the combination of a pressure-resisting vessel, a globular furnace in connection therewith with mouth projecting downward, radially-arranged conducting-pipes opposite each other in the wall of the furnace for leading oxygen, combustibles and nitrogen, and a valve for the escape of gases, as and for the purpose specified."

Also the following:

United States patent No. 837592, dated December 4, 1906, for apparatus for concentrating sulphuric acid, issued to Louis Stange.

Claim 9 reading—

"In an apparatus for concentrating sulphuric acid the combination of a conical cast iron concentrating-pan having an outlet at the bottom a chamber communicating with the outlet and forming a separate casting from the pan, a tank through which cooling-water is circulated surrounding said chamber, a furnace, heating-channels supplied with hot gases from the furnace and surrounding the upper part of the pan, air-heating pipes above the furnace, an annular hot-air-distributing conduit round the top of the pan connected to said air heating pipes, tubes leading from said annular conduit to direct hot air onto the liquid in the pan, an inner vessel having an opening at its lower end constructed of acid proof material, corresponding in shape with the pan and suspended in the upper part of the pan from the hot-air-distributing tubes, an outlet from the cooled chamber, a cock in said outlet and a sludge receptacle communicating with said outlet."

And also the following:

United States patent No. 909570, dated January 12, 1909, for apparatus for making sulfuric acid, issued to Antonio Gaillard.

Claim 3 reading—

"In an apparatus for making sulfuric acid the combination of a leaden chamber having circular holes cut in its top, cones having their lower flaring ends surrounding said openings respectively, a jet nozzle passing inwardly through the top of each cone, and water collecting means located under said jet nozzle, said means being provided with a discharge device for the unvaporized water passing out through the wall of said chamber, substantially as described."

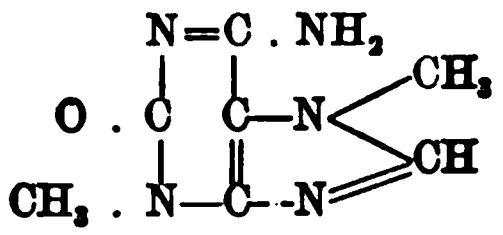
METHOD BY WHICH THE INDEX IS USED.

The following is given as an illustration of how the index would be used in a given case:

Claim 11 of United States patent No. 631705, issued to Emil Fischer, is a claim covering the product theobromin in the following language, viz:

"As a new chemical compound, the base 3-7-dimethyl-6-amido-2-oxy-purin having the formula above given and the following properties: It is soluble in boiling water and moderately cold water and soluble with difficulty in hot alcohol and in chloroform; it crystallizes in the form of prismatic needles, which contain when air-dried three molecules of water of crystallization."

The formula referred to in the claim is disclosed at line 8, page 4, of the patent as—



Now assume that when Mr. Fischer submitted to the office his application for this patent, the assistant examiner in charge of the case when treating this claim 11 not having found any reference in the classified patents meeting this product claim would before passing the case to issue have applied the indexing rule to this formula and have rewritten it in the form $C_7H_8N_4O$, and so entering the index would have found various references to literature of about the date of the application relating to bodies of apparently identical composition. It would then have been for Mr. Fischer or his attorneys to prove that his substance was different from them, failing which, claim 11 would have been rejected.

As a matter of fact, the index now discloses the following references under this formula:

First. Dimethyl-1, 7-amino-2-oxy-6-purin, citing E. Fischer taken from the German Berichte for 1898, page 3506.

Second. Dimethyl-1, 7-amino-2-oxy-6-purin.

Third. Dimethyl-3, 7-amino-6-oxy-2-purin. Both from the Berichte for 1899, page 3904, also citing E. Fischer.

Fourth. 1.7-dimethylguanine. Citing E. Fischer from Journal Chemical Society London Abstracts, volume 1, page 98.

Since Fischer filed his application for United States patent September 7, 1897, this probably antedated these publications, in which case claim 11 was properly allowed. Of course, however, the examiner before allowing this claim would have ascertained these dates of publication from the references thus found and would not have allowed the claim if the references were prior in date.

This formula will be found in about the middle of column 2 of Table I, but the actual search would at the present time cover 375 drawers of formula cards, comprising about 250,000 cards, and yet the whole time consumed in rewriting the formula and finding the references would not exceed one or two minutes, because the reference would be found in one definite and restricted space, in one drawer of the cabinet.

ESTIMATED NUMBER OF CARDS IN THE INDEX.

Until recently no official estimate of the number of cards in the index had been made. Three unofficial descriptive articles have been published in the Journal of the American Chemical Society, calling the attention of chemists to the index, and in them certain estimates have been made as to the number of cards which it then contained. These articles discuss the chemical questions involved in more detail than can be given here. They will be found in the volumes of Transactions of the American Chemical Society, as follows:

Volume XXII (1900), pages 478–494.
Volume XXIX (1907), pages 936–941.
Volume XXXIV (1912), pages 416–417.

The estimate used in the last articles has been found to have been much too large.

Owing to the fact that cards of varying thickness have been used from time to time, and that a large number of them are of extra-heavy stock because of printed matter cut and pasted upon them, and that as the drawers run these cards are mingled in very varying and changing proportions, it will be seen that a drawer of thin-stock typewritten cards will contain many more cards than a drawer containing mostly thick-stock cards with printed matter pasted upon them. In previous estimates, particularly that made for the last of the three articles above referred to, the cards were counted in a few drawers, and the assumption was made that all of the other drawers contained about the same number of cards.

For the purpose of this report the average number of cards contained in an inch of drawer space was estimated by measuring and counting the actual number of cards contained in 4 inches of space in 15 of the formula drawers and 15 of the title-card drawers, selected at various points so as to properly represent the whole; and the result was an average of 78 title cards and 80 formula cards per inch of drawer space, giving as a net result, based on actual measurements of space occupied in all drawers, in round numbers:

	Cards.
Formula cards filed	250,000
Title cards filed	449,000
Total filed	699,000
Finished cards for filing	60,000
Total	759,000

CARDS, HOW HOUSED.

These cards are now housed in Yawman & Erbe card-catalogue cabinets, in 15-drawer units, comprising a total of 70 units, built up in stacks of 5 units each, and with a total of 1,050 drawers in all; of which 525 drawers are reserved for the title cards and 375 drawers for the formula cards.

ESTIMATE OF NUMBER OF CARDS FOR CURRENT AND BACK WORK.

The following is an estimate of the probable number of cards necessary to be made each year to keep up with the current work, and also of the number required to accomplish all that was originally planned for the index:

	Cards.
Abstracts American Chemical Society, 24 volumes, 4,000 pages	55,000
Chemical Society London Annual Index	16,000
Supplements Richter Lexicon, 1 year portion	18,000
Society Chemical Industry Annual Index	6,000
American Chemical Journal Annual Index	400
American Electro-Chemical Society Annual Index	700
Journal Physical Chemistry Annual Index	500
Total	96,600

(Say about 100,000, United States patents not included.)

ESTIMATE FOR BACK WORK.

(To include the works as originally planned and necessary to properly cover the past.)

	Cards.
Watts's Dictionary of Chemistry, 4 volumes, 3,287 pages	184,000
Abstracts American Chemical Society, year (1907)	55,000
Chemical Society London Annual Index, 5 years	73,000
2 supplements to Richter's Lexicon	68,000
10 years American Electro-Chemical Society	4,800
15 years American Chemical Journal	11,000
12 years Society Chemical Industry	67,000
10 years Journal Physical Chemistry	5,000
Total	467,800

In round numbers we can say that the back work amounts to about four and one-half years of current work.

LIST OF BOOKS, PERIODICALS, ETC., ALREADY INDEXED.

The card index to chemical literature and patents now contains references from the following works:

Dictionaries, bibliographies, etc.:

Richter, M. M., Lexicon der Kohlenstoff-Verbindungen, 1900, and Supplement 1, 1901.

Beilstein, F., Handbook of Organic Chemistry, vols. 1 and 2.

Gmelin, L., Handbook of Chemistry, 19 vols. and index.

Carnelley, T., Melting and Boiling Points, vols. 1 and 2.

Clarke, F. W., Constants of Nature (Table of Specific Gravities) (1888).

Comey, A. M., Dictionary of Chemical Solubilities (1896).

Bolton, H. C., Select Bibliography of Chemistry (subject index only).

Matthews, J. A., Bibliography of Metallic Carbides (1898).

Doan, Martha, Index to Literature of Thallium (1899).

Langmuir, A. C., Index to Literature of Didymium (1894).

Dictionaries, bibliographies, etc.—Continued.

Magee, W. H., Indexes to Literature of Cerium and Lanthanum (1895).
Merck's Index (1907).
Scientific American Cyclopædia of Receipts, etc. (chemical synonyms only) (1892).

Textbooks:

Barker, Geo. F., Textbook of Elementary Chemistry (1891).
Blitz, Henry, Molecular Weight Determinations (1899).
Blount, Bertram, Practical Electro-Chemistry (1901).
Clowes, F., Practical and Analytical Chemistry (1885).
Cohn, A. I., Indicators and Test Papers (1899).
Dobbin, L. & W. J., Chemical Theory for Beginners (1896).
Fownes's Manual of Chemistry (Revised by Bridges) (1878).
Gattermann, L., Practical Methods of Organic Chemistry (1900).
Hantzsch, A., Elements of Stereo-Chemistry (1901).
Helm, Geo., Principles of Mathematical Chemistry (1897).
Jones, H. C., Theory of Electrolytic Dissociation (1900).
Jones, H. C., Elements of Physical Chemistry (1902).
Landolt, H., Optical Activity and Chemical Constitution (1899).
Mendeleef, D., Principles of Chemistry (1891).
Lengfield, Felix, Inorganic Chemical Preparations (1899).
Meyer, H., Determination of Radicals in Carbon Compounds (1899).
Meyer, Lothair, Outlines of Theoretical Chemistry (1892).
Moeller, F. P., Cod Liver Oil and Chemistry (1895).
Moissan, H., Traite de Chemie Minerale, vols. 1 and 2.
Morgan, J. L. R., Elements of Physical Chemistry (1899).
Muir, M. M. P., Elements of Thermal Chemistry (1885).
Muir, M. M. P., Principles of Chemistry (1889).
Muir, M. M. P., and S. C., Elementary Chemistry (1889).
Nernst, W., Theoretical Chemistry (1895).
Noyes, W. S., Organic Chemistry of the Laboratory (1897).
Ostwald, W., Outlines of General Chemistry (1890).
Ostwald, W., Solutions (1891).
Remsen, Ira, Inorganic Chemistry (1889).
Remsen, Ira, Introduction to Study of Carbon Compounds (Organic Chemistry) (1893).
Remsen, Ira, Principles of Theoretical Chemistry (1897).
Risteen, A. D., Molecules and Molecular Theory (1896).
Roscoe and Schorelemmer, Treatise on Chemistry (1886–1898).
Schimpf, H. W., Text Book of Volumetric Analysis (1900).
Schorelemmer, C., Chemistry of Carbon Compounds (1874).
Smith, E. F., Electro-Chemical Analysis (1894).
Strecker, A., Textbook of Organic Chemistry (1882).
Tilden, W. A., History of Progress of Scientific Chemistry (1899).
Tilden, W. A., Introduction to Study of Chemical Philosophy (1876).
Traube, J., Physico-Chemical Methods (1898).
Venable, F. P., Development of Periodic Law (1896).
Walker, J., Introduction to Physical Chemistry (1899).

Special treatises relating to industrial chemistry:

Friedlander's, Fortschritte der Theerfarben Fabrikation.
Heusler, F., Chemistry of the Terpenes (1902).
Hurst, G. B., Painters' Colors, etc. (1892).
Meldola's, Chemistry of Photography (1891).
Nietzaki, R., Chemistry of Organic Dyestuff (1892).

Periodicals:
American Association for Advancement of Science Reports of Committee on Indexing Chemical Literature, from 2 (1884) to 16 (1898), inclusive.
American Chemical Journal, July, 1900, to December, 1906, inclusive.
American Electro-Chemical Society, Transactions, 1902, vols. 1 and 2.
Berichte der Deutschen Chemischen Gesellschaft Index, vols. 1898 to 1900, inclusive.
Chemical Abstracts of American Chemical Society, July, 1908, to December, 1911, inclusive.
Chemical News (London), Index, 1900.
Chemical Society of London, annual vols. 1873 to 1882, inclusive.
Chemical Society of London, annual vols. 1883 to 1892, inclusive.
Chemical Society of London, Index of Journal from 1893 to 1907, inclusive.
Journal of Physical Chemistry (1900–1901).
Journal of Society of Chemical Industry, index for years 1882 to 1900, inclusive.
Patents:
Class 23, Chemicals, subclass 24, Carbon compounds, to September 10, 1901.
Miscellaneous:
Clarke, F. W., Constitution of the Silicates, Bulletin 125, United States Geological Survey.
Dana, J. D. and E. S., Mineralogy, 6th Ed. (1892).
Greenwood, E., Classified Guide to Technical and Commercial Books (1904).
Thorpe, F. H., Outlines of Industrial Chemistry (1898).
Twelfth Census of the United States (Bulletin 201, June 25, 1902, Chemicals and Allied Products).
United States Dispensatory (18th ed.).

SHOULD THE ANNUAL INDEX OF THE LONDON SOCIETY BE KEPT UP?

The question has been raised whether the annual index of the Chemical Society of London is not duplicated by the work of the American abstracters to such an extent as to render it useless to include both publications in the index.

It is found upon comparing the published lists of the publications indexed by each set of abstracts as follows:

Publications abstracted by the London society	101
Publications abstracted by the American society	516
Publications abstracted by the London society not abstracted by the American	29

These 29 publications not covered by our American workers are in the following languages, viz: German, 8; English, 12; Dutch, Swedish, and French, 2 each; and 1 each of Italian and Japanese.

Comparing 6 pages of the English Society Index of 1909 with the corresponding American work of the same year it is found that out of 256 articles and monographs indexed by the English workers, 159 of these articles were not in any way referred to in the American Society Abstracts.

These two facts together seem to fully answer the question, and show the necessity of including both works in the index.

SHOULD WATTS'S DICTIONARY BE INCLUDED AS ORIGINALLY PLANNED?

As to the necessity for including the four volumes of Watts's Dictionary of Chemistry in the index, since this is a work of some magnitude, that question has been studied along similar lines.

This volume covers the field of inorganic chemistry in a much fuller manner than is done by any other work as far as known.

Various passages were taken at different pages of different volumes of Watts's Dictionary, and the chemical card index was consulted to ascertain whether any references whatever to these chemical substances could be found, and with the following result:

Out of 135 chemical substances fully described by Watts, selected more or less at random, 94 were not at present found in the card index of 750,000 cards, of which number 23 were organic compounds and 71 inorganic.

The following, for example, are a few of these substances not found in the index:

$C_6H_6KNO_3S$, $C_6H_6AgNO_3S$, $C_{12}H_{12}N_2O_6S_2Pb$, $C_6H_{12}N_2O_6S_2$, $C_6H_5BaNO_6S_2$, and others, all from page 154 of volume 1.

$C_6H_4CaO_6S_2$, $C_6H_4O_6S_2Zn$, $C_6H_4O_6S_2Pb$, etc., all from page 458, same volume.

$B_4CaH_2O_8$, $B_8Ca_3Mg_3O_{18}$, $B_6H_2O_{12}Pb_2$, $Ag_2B_2O_4$, $B_{10}H_4O_{20}Sr_3$, etc., all from page 530, same volume.

$Co_2H_{36}N_{18}$, O_{18}, $Co_2H_{36}N_{16}O_{25}S$, $Co_4H_{68}N_{20}O_{23}P_3$, $Co_4H_{34}N_{10}O_{20}S_6$, $Au_2Cl_8Co_2H_{34}N_{10}O_{10}S_2$, $Br_{27}Cl_2Co_2H_{30}Hg_9N_2$, and others, all from page 227, volume 2.

This means that there are very many compounds described in the 3,287 pages of Watts's Dictionary for which the card index gives no references whatever; so that as to any one of these 94 substances mentioned on only four of the 3,287 pages of Watts's work, if anyone should apply for a patent on either product, process, or apparatus pertaining thereto, the index at present would furnish to the assistant in charge of the case no references in anticipation of the claims made by the applicant; nor is it at all likely that the index will ever contain these missing references if the four volumes of Watts's Dictionary be not included therein.

From the title of this work, "Watts's Dictionary," it might be inferred that the inclusion of the references of that work in the card index would be a needless duplication of effort, since a search in the card index could be supplemented by a search in the "Dictionary," but such is not the case, for the reason that this work is a dictionary in name only.

Reference to pages VII to XIV of the preface to volume 1 of that work, in which the plan of arrangement is fully described, will at once disclose the fact that the scheme is so complicated as to make it extremely difficult, without considerable chemical knowledge and a careful study of the plan of arrangement, to find the references relating to any particular substance.

In general, some of the difficulties and uncertainties proceed from the following facts:

The page where the references to any particular body will be found depends upon the theories now prevailing as to the chemical constitution of the substance.

For instance, titles commencing with the word methyl begin on page 255 of volume 3 and extend to page 405 of the same volume.

At page 361 of volume 3 references are given for the substance methyl-propyl-aniline having the empirical formula $C_{10}H_{15}N$ and constitutional formula $C_6H_5—N\begin{cases}CH_3\\C_3H_7\end{cases}$, whereas at page 447 of volume 2 will be found references to the body di-ethyl-aniline having the same empirical formula $C_{10}H_{15}N$, but the different constitutional formula $C_6H_5—N\begin{cases}C_2H_5\\C_2H_5\end{cases}$,

Now the chemical evidence supporting the view that these two bodies have the constitution as expressed above, and that neither of them is the body butyl-aniline, described at page 642 of Volume I, having the same empirical formula $C_{10}H_{15}N$, but the different constitutional formula $C_6H_5—N\begin{cases}H\\C_4H_9\end{cases}$ is probable rather than absolute; and in questions of chemical constitution we have all degrees of probability, from uncertainty to almost positive knowledge; and views of constitution change with changes in chemical knowledge and theory. These three bodies, all distinct

in their chemical properties, will be found in three different places in Watts's Dictionary; depending on whether the body is butyl-aniline, diethyl-aniline, or methyl-propyl-aniline; that is, the arrangement of the matter in Watts depends on theories of constitution, which theories now accepted may be right or may be wrong, and if wrong be discarded and forgotten in the future. This is the very thing the card index aims to avoid, i. e., basing the indexing upon changing theories, which with every change of view as to the constitution of the body would assign to it a different place in the index.

To continue, on reference to the introductory matter in volume 1 of Watts's Dictionary, we find:

First. That very many classes of substances are placed, not in their proper alphabetical position, but as subtitles under the name of the so-called parent substance, e. g. (p. viii): Salts of acids and bases, the salt sometimes coming under the base and sometimes under the acid; ethers, chlorides, amides, anilides, and anhydrides of organic acids; acetyl and benzoyl derivatives of compounds containing either hydroxyl, amidogen, or imidogen; alkyl derivatives of compounds containing hydroxyl; and the oxins and hydrazides of ketones and aldehydes; all of which are described in the same article as the parent substance, and will not be found in their alphabetical position.

To determine in each case what that parent substance is is often difficult, even for a good chemist; and for those having a minimum of chemical training is not possible. That is, none but a chemist of some skill could find the references now, and moreover, the chemical theory of to-morrow may indicate different parent substances from that of to-day.

Second. Again (p. x) many bodies have a plurality of names, and the so-called constitutional name determines the alphabetical place except when constitution is now doubtful, in which case the constitutional name is not used but the so-called trivial name instead. But the accepted constitution of to-day often becomes the doubtful constitution of to-morrow.

Third. The constitutional name must be written in a definite manner in order to determine the position in Watts's Dictionary. Thus, ethyl-methyl succinic acid appears in Watts's Dictionary under M as methyl-ethyl succinic acid; naphthyl-phenyl amine under P as phenyl-naphthyl amine; propyl-allyl malonic acid as allyl-propyl-malonic acid, etc. So that should one happen to look in Watts's Dictionary for propyl-allyl-malonic acid he would find nothing, but if he remembered this particular rule that the unsaturated alkyl preceded the saturated alkyl, and also as a chemist knew that propyl was a saturated and allyl an unsaturated alkyl, then he would not enter the dictionary under P for propyl but would rewrite the name, and enter under A for allyl, and so would find the reference.

There are seven closely printed pages of rules and exceptional cases (pp. viii to xiv, inclusive), all of which must be remembered and applied with a very considerable amount of chemical knowledge before anything can be found in Watts, or rather before you can be absolutely sure that if not found at first, the references may not be hidden away in some place where it would never have occurred to one to look, because of some one of these complex rules that had been overlooked for the time being. And when all is done the result is subject, as already pointed out, to the effect of varying theories of constitution.

It is hence quite evident that only by including all of the printed matter of Watts's Dictionary in the card index can it be possible to find any considerable number of the innumerable and very valuable references which it contains with any degree of readiness and certainty.

It therefore seems advisable to retain this work as part of the back work as originally planned and not yet accomplished, and any estimate for an increase of force should be based upon the inclusion of this dictionary as part of the work in arrears.

SHOULD THE BIENNIAL SUPPLEMENTS TO THE RICHTER LEXICON BE INCLUDED?

The same investigation with the same results was made with reference to the biennial supplements to the Richter Lexicon of Carbon Compounds, which, therefore, ought also to be kept up to date. These volumes are published every two years, but in the estimate the matter to be handled is reduced to an annual basis.

CHEMICAL PATENTS TO BE INCLUDED.

Reference has been made to the matter of including chemical patents in the index, but no exact estimate can be furnished as to the number of cards to be made from each patent, or the number of patents to be handled.

Chemical patents are found in many of the examining divisions, but are for the most part confined to Divisions III, VI, and XXXI. Many of the classes and subclasses handled in these divisions contain many patents covering chemical products, processes, and apparatus, but all mere mixtures as distinguished from pure substances are not within the scope of the index and would not be included in it, although because such mixtures perform chemical functions they belong in the chemical examining divisions.

Again, most of the apparatus, although claimed specifically in connection with the manufacture of some particular substance, is really of general application, and so would not properly be included in the index.

Again, the number of cards to be made from each patent is uncertain, although in the case of organic compounds the number would probably average much larger than in the case of inorganic compounds.

NUMBER OF CHEMICAL PATENTS TO BE INDEXED.

A rough approximation as to the number of chemical patents in the three chemical divisions has been made by using a certain percentage of the total number of patents in each class, this percentage in each case being fixed by the assistant working on the class, based on his general experience in handling the class, and the result indicates that at least about 10,000 United States patents in those three divisions remain to be indexed, which, with 533 patents already indexed from class 23, chemicals, subclass 24, carbon compounds, makes a total of the estimated patents in these divisions of 10,608 patents. Probably 33⅓ per cent additional, or one-third in round numbers, would be a fair allowance for scattering chemical patents in all of the other examining divisions besides Nos. III, VI, and XXXI, making a sum total of 14,144 chemical patents at the present time which come within the scope of the index.

In order to test this estimate, the four volumes of the Official Gazette have been examined for the weeks ending January 4, 11, 18, and 25, respectively, of the year 1910, during which month 2,761 patents were issued, only 40 of which were chemical in the sense that they would be included in the card index. This indicates that such chemical patents constitute only about 1.45 per cent of the total issue.

The total issue of patents up to October 29 is 1,043,057, and 1.45 per cent of this number is 15,124, so that for an approximate estimate the figures may be taken at 15,000 in round numbers.

CLASSIFIED CHEMICAL PATENTS AND INDEXED CHEMICAL LITERATURE.

The question is sometimes raised whether the index is covering the same or a different field from that covered by the office classification of chemical patents to such an extent as to render one or the other classes of work unnecessary.

There can be no question, however, that the two fields are different, but of equal importance.

First. Only those chemical discoveries which are patented can be covered by the patent classification, and it has already been pointed out that the vast majority, perhaps over 95 per cent, of the chemical discoveries will be found in literature only and not in patents.

Probably, at the outside, there are not over 15,000 United States patents already granted relating to pure chemistry, and of these not over 4,000 relating to distinct chemical substances, whereas there are probably several hundred thousand distinct chemical substances already described in literature, the majority being organic substances with extremely complicated formulas. The classified patents will only disclose references as to this less than 5 per cent of known substances, while for the other 95 per cent we are and always will be entirely dependent upon the card index or similar compilations.

Second. Per contra, the chemical patents are very largely directed to chemical apparatus of general application that can be used in preparing many and different substances, and the broad subclasses of chemical patents will, when established, bring all of these devices performing similar functions together in one convenient place for search purposes. This function the card index does not and can not attempt to accomplish.

The index is in the nature of a dictionary finding scheme for the individual substance and things pertaining to it.

The classified patents are, as shown, a classification rather than an index finding scheme of broad related classes of chemical things.

Third. Chemical patents relating to processes which are separated in the index and placed under the formula of the substance produced are, in the classified classes of patents, grouped together in one broad class based upon some one or more features which all of the processes have in common, so that in a process class of patents can be found similar processes for producing very dissimilar substances.

No chemical classes have yet been reclassified; but notwithstanding, as an example, may be taken class 23, chemicals, subclass 1, acids mineral. A few of the patents, selected at random, relate to the following substances, viz, silicon monoxide, SiO; chlorine, Cl; nitric acid, HNO_3; sulphuric acid, H_2SO_4; tungstic anhydride, WO_3; sulphur trioxide, SO_3; sulphur dioxide, SO_2; hyprochlorous acid, HOCl; phosphorus pentoxide, P_2O_5; etc. Now, all of these patents have in common the production of a mineral acid—that is to say, an acid not containing carbon as an element—but the substances covered by the class, as is seen, are very diverse in chemical formulas and in chemical characteristics. In the card index the literature relating to all of these substances would be in each case placed under the rewritten formula of the substance and be found in different parts of the index.

It is thus evident that the card index covers an entirely distinct field of inquiry from that covered by the subclasses of chemical patents and that both are equally important, neither one taking the place of the other.

Fourth. The viewpoint of the examiner and of the searching public is not always the same. Sometimes it is the specific substance that is important; then the use of the card index is indicated. Again, it is a broad related class of bodies, processes, or apparatus that is under consideration, in which case it is the classified patents that must be resorted to.

Moreover, in both classes of search, whether the inquiry be directed to a broad class of related substances or to the specific substance, a domestic or foreign patent is preferred as a reference to a passage in literature, and hence the patents are the primary field of search. It is only when the reference desired is not found in the appropriate subclass of patents that literature is resorted to, and, as already shown, it is to a much greater extent in chemistry than in other arts that the search as to novelty fails as to patents and must be continued in literature by means of the card index or similar aids.

Fifth. It is also true that consultation of the classified patents in the appropriate subclass gives one at once the specification and claims in full—that is, all available information concerning it—whereas the card index merely gives the book and page where the original matter may be found, or at most only a short abstract of what the original monograph contains. Hence, if a pertinent reference is found among the classified patents no further investigation is required, which is not the case when the card index is consulted.

USE OF THE INDEX BY EXAMINERS AND THE PUBLIC.

The card index is in daily use by the assistant examiners dealing in chemistry, by patent lawyers practicing before the office, by scientific workers in the various scientific bureaus of the departmental service here in Washington, and by chemists and other scientific workers all over the land.

For example, last summer a representative of the Department of Agriculture spent a number of days transcribing from the cards all data given pertaining to the subject of the potash industry and the extraction of potash from various natural sources, all for the preparation of a special bulletin dealing with the attitude of Germany toward our American consumers of this essential ingredient in fertilizers and the chances of utilizing a home supply of raw material in the production of potash.

PROGRESS IN CLASSIFICATION FROM 1898 TO 1912 AND TIME OF COMPLETION.

(*a*) Average force engaged in reclassifying each year since January 1, 1899, is indicated in column 2, Table A, herewith.

(*b*) Number of patents reclassified in each calendar year since January 1, 1899, is indicated in column 4 of Table A, and the number of classes published in each said year is indicated in column 3.

(*c*) Percentage of total patents reclassified, based on classes published as revised classes, 35 per cent. Percentage of total patents reclassified, based on classes published and those not yet published, but ready for publication except for the clerical work on them, 43 per cent.

(*d*) Estimated time required in future at present rate of progress is tabulated in Table B herewith, which table is based upon 25 classifiers, each classifying 2,000 patents per year. In Table C is an estimate based upon 50 classifiers, working at present rate per man. Table D is a chart showing estimated number of men to go once over the classification at the present rate per man.

TABLE A.

Year.	Average number of men.	Number of classes finished.	Number of patents therein Sept. 17, 1912.	Estimated number of patents therein at time of classification.	Total number of patents issued at end of the year.	Average number of patents classified per man during the period.
1899	4½	11	26,950	17,000	640,166	
1900	9	14	45,851	29,000	664,826	
1901	12½	15	61,419	40,000	690,384	2,850
1902	10½	18	42,296	29,000	717,520	
1903	12	8	25,753	19,000	748,566	
1904	8½	6	32,130	24,000	778,833	
1905	6½	4	17,071	13,000	808,618	
1906	7½	6	19,643	16,000	839,798	2,280
1907	6½	4	6,602	6,000	875,678	
1908	6½	4	26,862	23,000	908,435	
1909	10	6	17,929	16,000	945,009	
1910	17½	7	18,357	17,000	980,177	2,100
1911	25	5	16,852	16,500	1,013,094	
1912	23	3	6,984	7,000	1,040,000	
				[1] 100,000		
13 years	12	110	364,699	372,500	.....	2,340

[1] There are 150,000 patents now in the Classification Division conservatively estimated at two-thirds *completed,* included in which are three classes awaiting clerical work for completion.

TABLE B.—*Estimated progress of reclassification based on 25 men, reclassifying 2,000 patents per man-year, and an annual issue of 35,000 patents.*

Year beginning Sept. 24—	Number patents previously issued.	Number patents previously reclassified.	Per cent reclassified at beginning.	Reclassified during year by force.	Issue patents falling in reclassified classes.
1912	[1] 1,040,000	[2] 450,000	0.43	50,000	15,000
1913	1,075,000	515,000	.475	50,000	16,200
1914	1,110,000	581,200	.526	50,000	18,400
1915	1,145,000	649,600	.567	50,000	19,800
1916	1,180,000	709,400	.60	50,000	21,000
1917	1,215,000	780,400	.643	50,000	22,500
1918	1,250,000	852,900	.683	50,000	23,900
1919	1,285,000	926,800	.721	50,000	25,200
1920	1,320,000	1,002,000	.745	50,000	26,500
1921	1,355,000	1,078,500	.794	50,000	27,800
1922	1,390,000	1,156,300	.83	50,000	29,500
1923	1,425,000	1,235,800	.867	50,000	30,400
1924	1,460,000	1,316,200	.895	50,000	31,400
1925	1,495,000	1,397,600	.935	50,000	32,700
1926	1,530,000	1,480,300	.967	50,000	33,800
1927 (practically finished)	1,565,000	1,564,100	.....	.....	.....

[1] Approximately. [2] Estimated.

TABLE C.—*Estimated progress of reclassification based on 50 men, reclassifying 2,000 patents per man-year, and an annual issue of 35,000 patents.*

Year beginning Sept. 24—	Number patents previously issued.	Number patents previously reclassified.	Per cent reclassified at beginning.	Reclassified during year by force.	Issue patents falling in reclassified classes.
1912	[1] 1,040,000	[2] 450,000	0.43	100,000	15,000
1913	1,075,000	565,000	.525	100,000	18,400
1914	1,110,000	683,400	.615	100,000	21,500
1915	1,145,000	804,900	.704	100,000	24,600
1916	1,180,000	929,500	.788	100,000	27,600
1917	1,215,000	1,057,100	.871	100,000	30,500
1918	1,250,000	1,187,600	.96	100,000	33,600
1919 (completed)	1,285,000	.....	.....	.....	.....

[1] Approximately. [2] Estimated.

ESTIMATE OF TIME AND FORCE REQUIRED TO FINISH THE PATENT OFFICE CLASSIFICATION BASED ON PAST EXPERIENCE.

The Classification Division was formed November 17, 1898. The average number of men engaged on classification each year ending December 31 was obtained from the time reports. The number of classes finished each year was those that were officially published during that year, and worked upon at various times prior to the date of publication. The fourth column contains the number of patents that were in those classes on September 27, 1912. The number of patents in the classes published each year at the time they were published was estimated by assuming that the total number of patents on September 17,1912, which was approximately 1,040,000, bore the same relation to the total number of patents issued at the end of the year during which these classes were published as the total number of patents now in those classes did to the

number that were in them at the time they were published. This gives the actual number of patents classified by the men ending each year.

The 13 years which the Classification Division has been in existence is divisible into three groups, depending on the same relative number of men therein, viz, 1899–1903, 1904–1908, and 1909 to date. The average number of patents classified per year per man

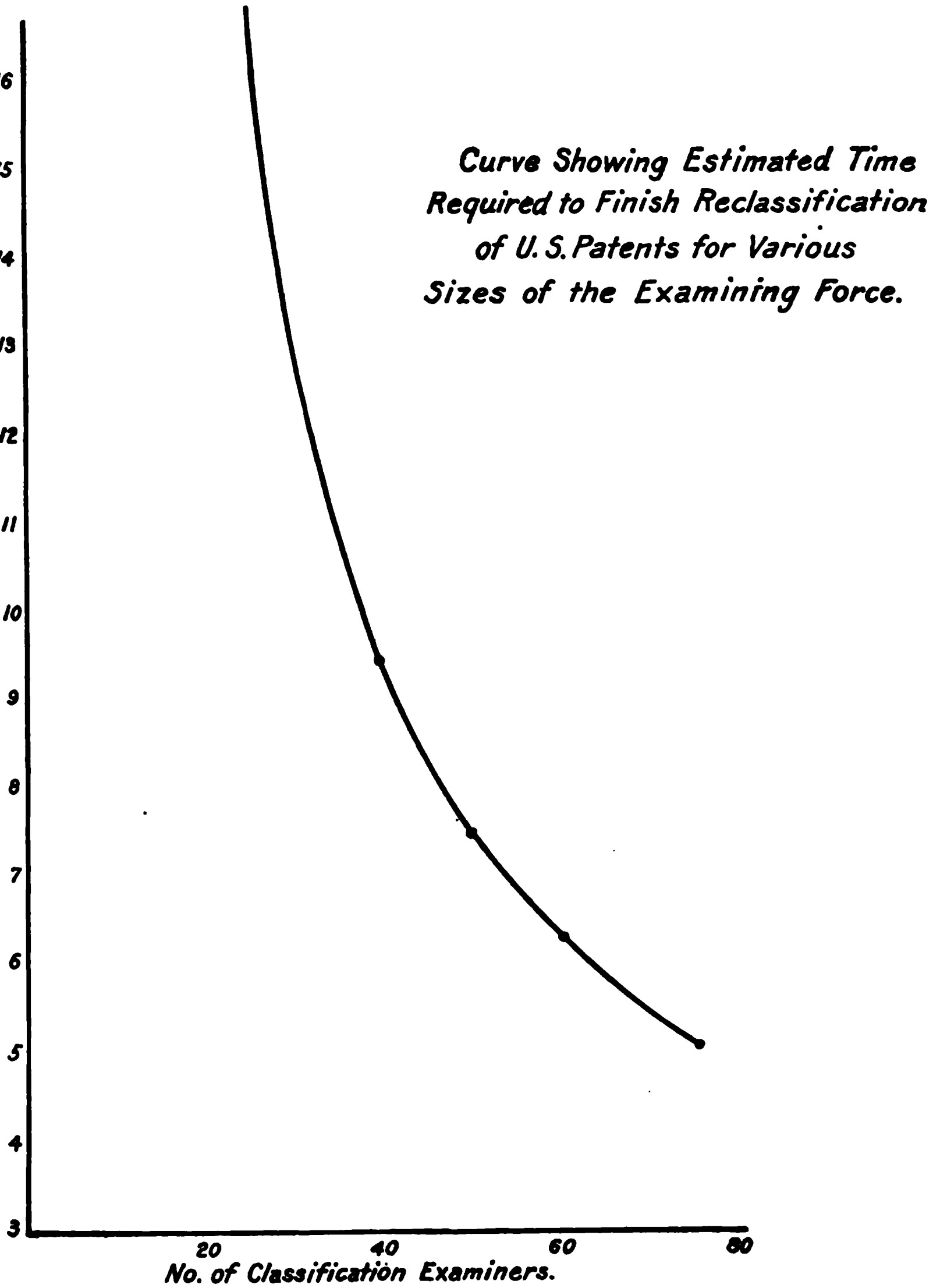


TABLE D.

is arrived at by dividing the total number of patents classified during that period by the number of men therein during that period.

In the last period it was necessary to estimate on the current work. This was done by consulting each examiner, who furnished a conservative estimate of percentage completion. Knowing the number of patents he had under advisement, the number

considered as classified was easily estimated. There are now in the classification division 150,000 patents, conservatively estimated as two-thirds completed.

The results show that the average number of patents classified during the existence of the classification division is 2,340.[1] This average of 2,340 for the whole period is obtained by dividing the total under column 5, 372,500, by the total man-years, 160.

Taking 2,000 patents per year per man as a conservative estimate, it is estimated that it will take 25 men 16 years at the present rate, or 50 men 7 years, showing the advisability of a larger force. The different rate is due to the fact that the more rapidly the classification is completed, the greater the percentage of patents that will fall into the reclassified classes at their time of issue, thus leaving in the current issue an ever decreasing number of patents in unreclassified classes.

The length of time required for a definite number of men to reclassify all the patents which will have been issued at the expiration of such period depends on:

(*a*) The total number of patents issued at the beginning of the period.

(*b*) The number of patents issued each year during the period.

(*c*) The total number of patents reclassified at the beginning of the period.

(*d*) The number of patents classified by the force during the period.

(*e*) The number of patents issued each year which automatically fall into reclassified classes.

In the foregoing tables (B, C, D) the estimated number of patents annually issued, 35,000, is based on the figures for 1906–1911.

CLASSIFICATION RULINGS.

In this case the contest involves class 171, electricity, generation; class 184, lubrication.

MARCH 9, 1912.

EXAMINER WRIGHT, *Division 12.*

SIR: The application of D. H. A. ———, serial No. ——, filed January 17, 1912, mercury droppers, is hereby assigned to Division 12 for examination.

It is stated in the specification that this device is an instrument "for depositing a desired quantity of mercury or some similar liquid upon the periphery of the armature of a dynamo electrical machine to insure its proper lubrication and also a suitable electric connection with the coacting brushes."

The claimed invention is directed purely to the means for holding a liquid, with the devices whereby a small quantity may be delivered therefrom at intervals. It does not appear that anything in the construction illustrated or described limits the device to use with mercury. Its operation is substantially the same as if it contained oil for delivery to a part to be lubricated. One of the functions of the mercury when delivered is said to be lubrication.

The device is clearly adapted to serve the purposes of lubricators of the gravity feed, automatic cut-off type, and will be more available for search in class 184 than with dynamo electrical machines.

——— ———,

Examiner of Classification.

In this case the contest involves class 35, educational appliances; class 40, card, picture, and sign exhibiting.

JUNE 4, 1912.

EXAMINER TUCKER, *Division 35.*

SIR: The application of B. C. ———, serial No. ——, filed ———, advertising devices, is hereby assigned to division 35 for examination.

I do not think this application belongs in any of the textile classes. The invention consists merely in making a dummy rug by printing the colored design on a bed of pile fabric so as to give the effect of the color in the actual rug better than if it were printed on a smooth paper surface.

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[1] Per man each year.